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Volume 7, Number 2

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Banning a Risky Product Cannot Improve Any Consumer's Welfare (Properly Understood), with Applications to FDA Testing Requirements

Robert Higgs

Neoclassical welfare economists maintain that consumers suffer when risky goods are supplied in an unregulated market. Consumers are said to possess imperfect information (Stiglitz 1988, pp. 78–79; Barr 1992, pp. 749–50) and limited ability to process complex information. Moreover, because information is presumed to be a public good, markets are *ipso facto* supposed to produce and disseminate a suboptimal amount of information (Stiglitz 1988, p. 79; Greer 1993, p. 416; Scherer 1993, pp. 98–99, 101). Under these conditions, neoclassical welfare economists maintain, consumers make choices that cause them to be worse off than they would be, say, if a regulator constrained their choices by banning very risky products from the market. The alleged market failure may stem from outright consumer ignorance, but it occurs even if consumers conduct what seems to them an optimal search for information. Given their inability to process complex information and the public-good problem with respect to information, inefficient risk bearing occurs (Greer 1993, pp. 413–14), as consumers bear more risk than they would choose to bear if they could process all information flawlessly and the public-good problem with respect to information creation and dissemination had been solved.

Some analysts have noted, however, that U.S. regulatory agencies

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such as the Food and Drug Administration, the Consumer Product Safety Commission, and the Department of Transportation, which enforce product bans, face incentives of the sort recognized in public choice theory that lead them to impose too much safety on consumers by denying some risky products access to the market (Weimer 1982; Grabowski and Vernon 1983; Gieringer 1985, 1986; Kazman 1990; Higgs 1993). To analyze and remedy this government failure, neoclassical analysts propose the application of social cost-benefit analysis (Peltzman 1974; Grabowski and Vernon 1983, pp. 11–13). As Austrian economists appreciate well, however, social cost-benefit analysis cannot solve this (or any other) problem, because, *inter alia*, it rests on unjustifiable implicit aggregation of different individuals' utilities (Buchanan 1979, pp. 60–61, 151–52; Pasour 1988, pp. 114–16; Formaini 1990, pp. 39–65; Cordato 1992, pp. 57–60, 111). Other analysts have tried to sidestep this problem by conducting an appraisal in terms of lives lost and lives saved by various regulatory decisions (Gieringer 1985; Kazman 1990, pp. 47–50). I shall criticize both approaches. Neither gets at what economic analysis is supposed to be about: consumer welfare as evaluated by the consumers themselves and demonstrated by their actions.

Fundamental Ideas

Risk is an inescapable condition.[1] However much people may prefer to live in a world of complete certainty, they simply cannot do so. Just banishing risk, whether by regulation or otherwise, is not a feasible option. Whatever the institutional arrangements for distributing the gains and losses associated with risky actions, someone must bear the risks inherent in the choices made. Insurance can pool and spread risks. Government can tax or subsidize risk bearing. But at any time, given the knowledge and resources available to the members of society, any set of choices has associated with it certain irreducible risks. As Mises (1966, p. 105) put it, "The most that can be attained with regard to reality is probability."

Given that no action has a completely certain outcome and that the degree of risk attached to various actions differs, every consumer choice represents a selection in two dimensions: (a) selection of good X (itself a package of attributes) instead of alternative goods and (b)

[1]I do not make the Knightian distinction between risk and uncertainty. If consumers lack an acceptable estimate of probabilities from an external source, they must necessarily proceed in terms of subjectively formulated probabilities. To deny this proposition is to suppose that consumers appreciate that outcomes are contingent but act as if they know nothing at all about the likelihood of possible outcomes. Compare Langlois (1982, pp. 9, 24, 31, 38–39).

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selection of a certain degree of risk instead of the alternative degrees of risk associated with goods not chosen. If people care about the degree of risk assumed, which I suppose they generally do, then each choice they make represents a deliberate selection from alternative two-dimensional objects, each being a good-*cum*-risk package. "The opportunity cost of the selection . . . is not the utility of outcomes foregone but some foregone convolution of utility and probability" (Langlois 1982, p. 29 and Figure 3). People choose the most preferred package. Risk-averse consumers make tradeoffs, choosing something other than the good with the greatest expected benefit whenever a lower degree of risk associated with another good more than compensates them for the sacrifice of the greater expected benefit. Having different tastes for risk, people make such choices differently.[2] As Buchanan (1969, p. 50) has noted, "In the face of uncertainty, the evaluation of alternatives by the actual decision-taker may differ from the evaluations of any external observer."

Every market, then, involves allocations of both goods as such and risk-bearing. Economists, especially those in the field of finance, are familiar with the principle of market efficiency that takes account of both dimensions. Just as market exchange of existing goods can improve the subjective well-being of consumers with different preferences, so the opportunity to trade in the risk dimension of goods can improve the subjective well-being of consumers otherwise stuck with some fixed distribution of risk bearing.[3] In both cases, one presumes that a restriction of the field of choice can make some or all traders worse off but cannot make anybody better off. Yet neoclassical welfare economists continue to argue that market failures of the sort mentioned above may invalidate this general presumption in favor of unimpeded consumer choice of risk bearing.

Can Free Choice in Risk-Bearing Make Consumers Worse Off?

Suppose that, left to my own discretion, considering everything I know about the prospective benefits and risks of consuming good *X*, I choose to consume it. Now suppose that you know something about *X* that I do not, say, that it causes death once in every 100,000 cases in which someone consumes a certain amount of it daily for a year.[4]

[2]Eraker and Sox (1981) document the wide variation in attitudes toward risk-bearing of persons considering alternative medical therapies.

[3]"Efficient risk-taking will generally lead consumers to buy some risky products and to forego some safety precautions" (Viscusi 1991, p. 52).

[4]The marginal annual risk of death for a person drinking one saccharin-sweetened

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Can we say that preventing me from consuming the good improves my welfare?

We cannot. Two possible cases exist. In one case I would have chosen to consume X even had I known what you do about its risk, because I would have regarded the risk as worth taking in order to gain the expected benefits of consuming the good. In the other case I would have refrained from consuming X had I possessed your knowledge. But *banning the product is quite different from giving me new information*. By simply denying me the option to consume X, you have definitely made me worse off, because you have removed my most preferred object of choice from the set of alternatives open to me. The utility that consumers maximize by their choices is *prospective and subjective* utility, not *ex post* utility and not utility as gauged by someone else in possession of different information (Rothbard 1977; Buchanan 1969, pp. 42–44; 1979, p. 59).

Of course, consumers sometimes conclude afterward that they regret a particular choice. Their regret only validates the fact that their choice was indeed risky, that an undesired contingency could occur. Consumers know this when they choose, and they make their choices in the light of that knowledge.[5] To deny them access to a particular risky option does not differ essentially from denying them access to goods of a particular taste, color, location, or any other dimension of choice. The perceived degree of risk is a dimension of goods considered by consumers when they make a (forward-looking) choice. To ban a good because a third party believes it to be in some sense riskier than the consumer believes it to be or because a third party values risk-avoidance more than the consumer does is simply to impose the third party's preferences on the actual consumer.

This remains the case even though the consumer would have chosen differently had he known what the third party knows. The neoclassical economist's lament with regard to "imperfect information" rests on an irrelevant and misleading standard of reference

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soda a day has been estimated to be 1 in 100,000; for someone eating four tablespoons of peanut butter a day, 1 in 25,000. See Greer (1993, p. 443).

[5]The three preceding sentences provide, I submit, a more satisfactory understanding of the Rothbardian position than the criticism advanced by Cordato (1992, p. 43), who objects that "Rothbard's conclusions [that free-market exchanges increase social utility] would only hold in an error-free world of perfect knowledge, where expectations necessarily coincide with results." See also Gordon (1993, pp. 103–5). Whether the product in question "ultimately" proves more or less toxic or more or less effective than consumers initially supposed has no bearing on the present analysis. Choices must be made on each day prior to that "ultimate" day. Should the attributes of the good ever become known fully by everybody, the present analysis no longer applies.

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("perfect information"). In reality, everyone without exception is necessarily ignorant of many things known by others. If consumer choice were to be permitted only to consumers whose knowledge, whether of risk or any other dimension, equaled or exceeded that of all other persons, then persons in general would not be permitted to choose anything for themselves, and no genuine market order could exist.

An arrangement in which only the most knowledgeable may choose raises problems of its own. Who will identify the most knowledgeable person for each dimension of choice, determining that John knows most about colors, Mary about textures, Carlos about risks? How will disputes about who has the most knowledge be resolved? Does everybody agree as to how risk ought to be conceptualized and measured? What will be done if even when Juanita is recognized as the most knowledgeable about the risk of getting a headache from using product *X*, some consumers seem to care a great deal about avoiding a headache whereas others seem to care hardly at all?[6]

Even if someone knows the degree of risk better than I, important questions remain. Why don't I know? Is it because I am not concerned about this particular risk? Is it because I regard the expected cost of acquiring knowledge of the risk to be greater than the expected benefit of possessing such knowledge? Again, no one can possibly acquire more than a few sorts of knowledge. Should consumers who decide to direct their information search along other lines be forbidden to choose all goods that someone else knows to be riskier than the consumers in question do?

It is instructive to apply to the information question the general Misesian position as stated by Cordato (1992, pp. 19, 21). "Since there is no optimal outcome [in the market for information] apart from that which is generated by the actual interaction of market participants, there is no standard by which to argue that 'too little' [information] is being produced. . . . There is no way for the economist or policy maker to know the preferences of market participants [with respect to how informed they wish to be on various subjects] apart from what the individuals reveal them to be through action."[7]

Of course, it is trivially true that if I had the superior knowledge now possessed by others, I might be able to improve my *post-choice*

[6]Lave (1987, pp. 291–92) observes: "There is no single optimal decision for all people. The key issues in medical decision-making are the extent and quality of information about the outcomes of alternative interventions, the incentives influencing the ill person and those treating him, and the preferences of those involved. . . . [R]egulators usually make the most conservative (that is, worst case), plausible assumption in each situation."

[7]See also Buchanan (1979, pp. 61, 86–87; 1986, pp. 73–74).

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evaluation of my welfare. But this is only to say that if people knew more, they could act successfully more often. So what? If altruists were to disseminate free information, some people might take the time to absorb that information and be glad they did. But again, so what? Are we to allow individuals to reveal their own valuations of information by the efforts they make to inform themselves, or are we to wait for more altruists to spread free information before allowing individuals to make their own choices in the market? How many more altruists are necessary? Who will decide when consumers are finally well enough informed to make decisions about their own consumption, and on what grounds will the decision rest?

The neoclassical argument that, because of the public-good character of information, people will be suboptimally informed cannot justify a policy of banning a risky product. The argument is general. How can it justify banning a new medicine but not a pork chop? If it be countered that the medicine is harder to understand and therefore consumers expose themselves to greater danger by consuming it at their own discretion, the counterclaim itself may be questioned. Who really knows the dangers best? What justifies the assumption that one or a few federal bureaucrats actually know more about risks than consumers? Andy Rutten has written, "The real flaw in the traditional argument is that [neoclassical economists] invoke the information arguments so as to avoid the difficult (because impossible) work of showing that third parties really would make better decisions."[8] If it be countered that some consumers are obviously dullards, then the question becomes: How can one justify a comprehensive ban rather than a ban applicable to the dullards alone? And if a discriminatory ban is to be enforced, who will classify each member of the population as either a dullard or not, and what will be the basis for making the discrimination?

Upon closer inspection, the neoclassical argument founded on the public-good character of information appears to depend on the implicit assumption that someone omnisciently looking down on a situation populated by imperfectly informed (i.e., real) actors can say what the "correct" degree of information is. Further, to justify government restrictions of the market, the neoclassical analyst must imagine that this heavenly onlooker counsels government employees, such

[8]Rutten to the author, September 1993. Says Block (1992, p. 103), "to concede a monopoly on truth to a government agency acting as absolute scientific czar is fraught with peril far exceeding that of so-called snake-oil information governments so fear." Seidman (1977, p. 32) observes that "there are points in the [FDA's drug or medical device approval] process where single individuals can block approvals." What is the likelihood that each such individual will have more knowledge than anyone else?

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as the drug reviewers at the FDA, as they make a decision about the date—the same for all persons, regardless of differences in their knowledge, health condition, or attitude toward risk bearing—when it will be "optimal" for everyone simultaneously to gain access to a new drug.

"Perfect information," as it is commonly understood in neoclassical analysis, is not a condition that can exist in reality; nor is it an appropriate standard of reference in welfare economics.[9] We may choose only among feasible institutional arrangements for conducting our affairs. Comprehensively banning a beneficial but risky product from the market is the bluntest of policy instruments, the crudest sort of central planning. A free market in risky goods, on the other hand, permits the flexibility for individuals to adjust their choices to the differences in their conditions and preferences. Some consumers desire to become very well informed before taking the risk of using a new drug or device; others are willing to assume the risk quicker, either because they are more comfortable with risk bearing or because they stand to lose more, in their own subjective estimation, by waiting longer before using the product (Eraker and Sox 1981). In the free market each individual can adjust the mix of products consumed, the kind of risk borne and, within limits, the degree of risk borne. Inasmuch as both the expected benefit of using a product and the burden of risk bearing are subjectively experienced and knowable only to the individual actor, and both vary from one person to another, it should be clear that no central planner can possibly improve on the outcome of a flexible market process by crushing it beneath the weight of a single comprehensive decision imposed on everybody from above.[10]

Finally, consider an alternative argument in support of banning a risky product. Suppose one could establish that, by banning product *X* from the market, life expectancy definitely would be increased. May we now conclude that the product should be banned? Of course not. A policy founded on such a decision rule implicitly enforces a one-dimensional utility function: only length of life has value. Clearly people do not have such limited preferences. Every day in various

[9]In the words of Cordato (1992, p. 116), "[Neoclassical] economists have . . . constructed a parallel universe that looks very little like the one with which we must cope, and assessed the efficiency problem that would exist in that universe."

[10]See Higgs (1993) for further contrasts of central planning and free markets as institutions for allocating the risks associated with the use (or nonuse) of medical goods. Also, excellent discussions may be found in Gieringer (1985, 1986) and Weimer (1982, pp. 263–77).

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ways people choose to place their lives at risk in order to pursue other goals.[11]

If a risky new medicine may justifiably be banned, why shouldn't the government also ban portable ladders, cigarettes, red meat, fast cars, firearms, private aircraft, and countless other goods that consumers value and purchase, all of which may reduce the user's life expectancy? It might be countered that ordinary people can more accurately estimate the risks of using these goods than they can the risks of using a new medicine. But this need not be so.[12] Who really knows all the risks (or benefits of) of eating beef steak or drinking cow's milk? To give people the *option* to consume a risky good is not to insist that they consume it. People are free to consult expert sources of information and advice before making their choices, and the experts may know a great deal—far more than government regulators know—about the probabilities of adverse contingencies. Moreover, consumers may bear a much greater cost—which, because it is subjective, only they can know—by foregoing the use of the new medicine than by foregoing the use of a ladder.

In sum, banning a risky product, which often appeals to paternalists, is indefensible in relation to the maximization of consumers' utility properly understood. Banning a product *always* represents the imposition on consumers of someone else's preferences. (Every parent understands this proposition.) Banning a product cannot make anyone better off in terms of the properly construed objective analyzed in economic theory: maximization of the *prospective and subjective* utility of responsible adult consumers.

Applications to FDA Testing Requirements

Since 1962 the Food and Drug Administration has permitted the marketing of a new drug only after the manufacturer has conducted to the agency's satisfaction an elaborate series of tests, including laboratory and animal experiments and three phases of clinical trials with human subjects, to establish that the drug is both safe when used as recommended and effective for its intended use (Grabowski and Vernon 1983, pp. 21–27; Weimer 1982, pp. 246–50; Gieringer 1986; Kazman 1990, pp. 37–40). As the regulations have become more

[11]For estimates of a number of commonly borne risks, see Wilson and Crouch (1987, p. 236) and Greer (1993, p. 443). Reporting on studies of "the implicit values of life reflected in decisions involving a broad range of risky product and job choices," Viscusi (1991, p. 51) notes that "the preferences with respect to risk follow patterns one would expect if these risks were the result of rational tradeoffs."

[12]Gieringer (1985, p. 201) notes that "the overwhelming number of drug accidents are due to old, not new, drugs."

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extensive and the agency's requirements and standards more demanding and unpredictable, the time and expense of the necessary testing have grown. Presently the average drug takes about a decade to complete the approval process (DiMasi, Bryant, and Lasagna 1991, p. 480). While the product awaits approval, consumers who might have benefited from it suffer unnecessarily and, in many cases, die prematurely.

To evaluate this regulatory system, I construct a simple model based on the ideas expressed in the preceding section of the paper. The model provides a means of assessing several different aspects of the FDA's regulations. Each aspect can be seen as a restriction that cannot improve the well-being of any consumer but can—and no doubt does—diminish the well-being of some consumers.

The model shows the relations between two sources of marginal utility and the testing time t of a drug before it is permitted on the market. In general, the more demanding the FDA standards for establishing safety and efficacy, the longer the time required to satisfy the standards. Thus the duration of testing can serve as a measurable index of other dimensions of the required testing such as number of subjects, number of separate tests, number of variables monitored, total expense, and so forth (Weimer 1982, p. 256; Ward 1992, p. 49). Notice, however, that letting the duration of testing serve as a proxy for other dimensions of testing is only an expositional convenience. The basic logic of the model remains the same, even if one considers the problem piecemeal for each separate dimension of the testing.

Figure 1 is a diagram of the model. Note first that the diagram pertains to a given individual, Person A, at a given date. Person A may relocate the functions at any time in accordance with changes in personal valuations. The units in which each individual measures the marginal utilities are known to that individual only. Interpersonal utility comparisons cannot be made. Nor can the utilities of different individuals be aggregated to arrive at a "social benefit function." There is no common unit for such aggregation; nor in reality is there an institutional arrangement by which a common unit might be revealed as it is, for example, by dollar prices in the neoclassical model of a perfectly competitive economy in general equilibrium with the dollar serving as a numeraire. By labeling the functions as marginal utility (MU) functions, I hope to forestall anyone's confusing these functions with the social marginal cost and social marginal benefit functions used by neoclassical analysts to analyze issues of this sort. The Austrian analysis offered here, unlike the corresponding neoclassical analysis, rests squarely on methodological individualism and subjectivism.

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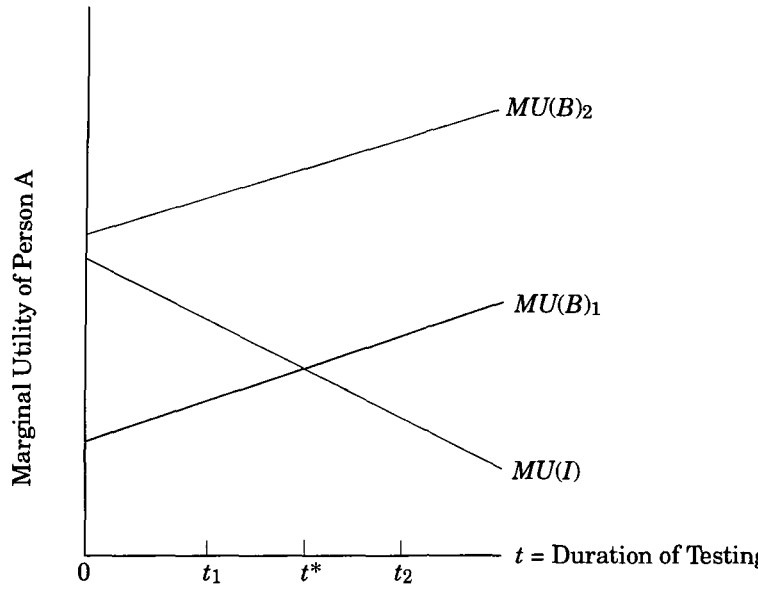

Figure 1. Determination of An Individual's Optimal Testing Duration

When testing first begins, the individual gains a definite marginal utility, denoted $MU(I)$, from acquiring the information yielded by the test about the drug's efficacy, its toxicity, and other side effects. One is reassured to know, for example, that the test subjects did not drop dead after taking the drug on day one. As the duration of the testing increases, then eventually if not immediately the marginal utility of the information gained from the last day of testing declines: $MU(I)$ is a decreasing function of t.[13] I assume nothing else about the shape of $MU(I)$; the linearity of the function as drawn in Figure 1 is arbitrary. One may also think of $MU(I)$ as depicting the *marginal benefit* of testing good X as evaluated by Person A on a given date.

On the other hand, the longer the duration of the premarket testing, the longer the consumer must forego the benefits of using good X, denoted $MU(B)$. While the foregone marginal utility of using

[13]Wardell (1979, p. 33) notes that "current Phase III trials [the final stage of the clinical testing], although the most costly and time-consuming part of the clinical development process, add very little to what has already been learned about a drug's efficacy and toxicity by the end of Phase II." Conceivably, $MU(I)$ might increase in the early stage of testing, but eventually it *must* decline, if only because the human lifespan is limited. In using the model, nothing is gained by considering an initially rising portion of the $MU(I)$ function.

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good X may be low at an early stage of the testing, $MU(B)$ rises as t increases. The longer one waits to use X, the greater the likelihood that one's condition will worsen to the point that X will no longer suffice to alleviate the problem. Hence, $MU(B)$ is an increasing function of t. I assume nothing else about the shape of $MU(B)$; the linearity of the functions drawn in Figure 1 is arbitrary. One may also think of $MU(B)$ as depicting the *marginal cost* of testing good X as evaluated by Person A on a given date.[14]

In extreme cases people will soon die without access to a potentially life-saving drug. Such persons might be willing to use a new product immediately, notwithstanding the possible hazards associated with its use, which are initially quite uncertain because it has been tested only in the laboratory and with animals. A member of this desperate group would have an $MU(B)$ function like that labeled $MU(B)_2$ in Figure 1. At any positive test duration, the marginal utility of the benefits foregone because of another day's testing exceeds the marginal utility of the information gained by another day's testing. For these people, the optimal test duration is zero days.

For others, presumably the more typical cases, immediate use of X would be undesirable. Before the good has undergone any clinical testing at all, the marginal utility of the information gained from at least a few days of testing would be worth waiting for, because the marginal utility of benefits foregone would be relatively low for low values of t. As t increases, however, $MU(B)$ increases and, as shown by the function labeled $MU(B)_1$ in Figure 1, it eventually equals and then exceeds the value of $MU(I)$, which falls as t increases. The test duration t^* at which the two MU functions have equal values is the optimal one for Person A. This person will not voluntarily use X before it has undergone a test period of this duration. However, this person would object should the premarket test period be prolonged by regulators beyond t^*, judging the foregone benefits associated with additional waiting to use X greater than the benefits of the additional information acquired.

Now, suppose that a regulatory agency effectively fixes the duration of premarket testing, as the FDA does.[15] Two cases are possible.

[14]I can imagine conditions such that $MU(B)$ would not be a monotonic increasing function of t. For the model, all that matters is that if $MU(I)$ ever intersects $MU(B)$, it does so from above. Otherwise the model allows an absurdity: that a person favors early use of the product but, beyond a certain period of testing, prefers to wait for more testing.

[15]The agency does not set the test duration at the beginning of the process. Rather, it extends the period sequentially (and unpredictably) by advising the applicant from time to time that more information must be submitted or additional tests performed or simply by spending more time processing the initial application.

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One possibility, shown as duration t_1 in Figure 1, is that the regulator sets t below the individual's optimum, which is t^*. In that case the individual refrains from using the product, after it becomes available in the market, until it has undergone further testing. For all such persons, the regulation is not a binding constraint. These persons desire more testing than the regulator requires. The regulator's restriction brings them no benefit whatever.[16]

In the second case the regulator effectively fixes a test duration such as t_2 in the figure, which exceeds the individual's optimum. In this case individuals cannot consume the good as soon as they wish. Even though a consumer is willing to accept the risk of current use, the manufacturer is not permitted to sell the good. The well-being of the consumer is diminished. The consumer will gain some utility from further testing, but the utility sacrificed by additional waiting is greater than the utility gained from the information yielded by the additional testing.

We have then two possibilities. Either the regulator sets t equal to or less than an individual's optimum, in which case the regulation neither helps nor hurts the consumer; or the regulator sets t higher than an individual's optimum, in which case the regulation definitely reduces the well-being of the consumer. In short, marketing restrictions like those enforced by the FDA can make no one better off in the sense relevant in economic theory, but they can—and, as indicated by the many public complaints registered against the FDA, they clearly do—make some consumers worse off.[17] Overall, restrictions of this kind, which ban a product from the market, can only hurt consumers.[18]

Using the model, one can evaluate various aspects of the FDA's policies with regard to premarket testing requirements. Consider, for

[16]Whether the manufacturer voluntarily performs the additional testing desired by Person A is a separate issue, which I presume depends on the seller's estimate of whether, given the expected incremental streams of cost and revenue, the additional testing will increase the present value of the firm.

[17]Some of the complaints, which have appeared recently in the press, are quoted in Higgs (1994).

[18]In a paper that is for the most part excellent, Weimer (1982, pp. 253–55) comes close to reaching this conclusion, but his analytical framework, cast in terms of hypothetical numerically comparable costs and benefits for different *groups*, can be, as he recognizes, only a means of illustrating a point, not a compelling demonstration. Weimer's analysis remains tied to the neoclassical concept of *social efficiency*: "So long as there were patients who would elect to take drug X after being informed of the benefits and risks associated with it, the regulatory decision not to allow marketing would be socially inefficient" (p. 255). In fact the decision is much worse than merely "socially inefficient": it harms some consumers and helps nobody.

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example, how an individual's optimal testing time t^* would change if it were discovered that a drug might be helpful in treating a second illness as well as the one for which it was originally intended.[19] In this case the $MU(B)$ function shifts upward, as Person A is foregoing not only the marginal utility of using drug X to treat condition 1 but also the marginal utility of using X to treat condition 2. Because the $MU(I)$ function remains fixed, the intersection of the $MU(I)$ and the $MU(B)$ functions must now occur at a lower value of t. This conclusion is intuitively obvious: the more conditions a drug can alleviate, *ceteris paribus*, the sooner a consumer will desire access to it.

The FDA, however, regulates drugs so as to preclude this result. Even if solid scientific studies or extensive clinical uses indicate that a previously approved product will prove useful in alleviating an additional condition, the product may not be legally marketed for that indication.[20] The seller is required to conduct a new, separate set of tests complete with years of clinical trials, and to present the FDA with a New Drug Application based exclusively on the additional therapeutic claim (Weimer 1982, p. 279; Gieringer 1985, pp. 188–90; 1986, p. 10; Ward 1992, pp. 47–49). Consumers' welfare is diminished by the delay in the seller's advertising and marketing for the new use of a product already on the market.[21]

Consider next the effect on Person A's optimal U.S. testing time t^* if information on drug X's efficacy and side effects were to become available from tests or consumer experience in other countries. In this case the $MU(I)$ function would shift downward, as the marginal utility of any particular increment of U.S. testing now would have lower value to Person A. With the downward shift of $MU(I)$, given that the $MU(B)$ function remains fixed, the two functions intersect farther to the left and hence the value of t^* is lower than before. Again, this

[19]One frequently sees news items like those from the *Wall Street Journal* whose headlines announced "Study Finds Bristol-Myers Heart Drug Slows Down Kidney Disease in Diabetics" (November 11, 1993) and "Breast Cancer Drug Now Gaining Favor May Also Reduce Risk of Heart Disease" (September 1, 1993).

[20]For example, by the 1980s, on the basis of extensive research reported in the medical literature, physicians accepted that patients with heart disease can reduce their risk of heart attack by taking a little aspirin each day, but the FDA forbade the sellers of aspirin to mention this benefit in their advertising to the public. See Pearson and Shaw (1993, pp. 12–15, 55–56, 81–84). Of course, no drug company will spend hundreds of millions of dollars to gain FDA approval to make a new claim when the product cannot be patented and many different companies can produce it.

[21]Physicians are legally free to use drugs for unapproved indications, but in practice they are reluctant to do so because of fears related to malpractice litigation. See Gieringer (1985, pp. 189–90; 1986, p. 17) and Nicholas Bachynsky, M.D., in the foreword of Anderson and Anderson (1987, pp. viii, xi–xii).

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conclusion comports with intuition. Given that more information is already available for gauging the benefits and risks of using X, the consumer will be satisfied with a shorter period of premarket testing in the United States.

The FDA, however, usually does not alter its testing requirements in recognition of foreign testing or consumer experience. Even drugs that have been used abroad safely and beneficially, sometimes for decades, must undergo the same elaborate, expensive, and time-consuming testing as those never used or tested previously (Wardell 1979, p. 30; Grabowski and Vernon 1983, p. 69; Gieringer 1986, pp. 11, 14).[22] Hence arises the notorious "drug lag," the delay between the introduction of drugs elsewhere and their marketing clearance by the FDA for sale in the United States (Temin 1980, pp. 141–51; Wardell and Lasagna, 1975; Anderson and Anderson 1987; Kazman 1990).[23] Whereas consumers want quicker access to drugs already tested and used abroad, the FDA as a rule does nothing to accommodate this desire, thereby thwarting consumer satisfaction in still another way.

Consider now the effect on Person A's optimal testing time t^* if the new drug X is chemically related to an existing drug. Because the mechanism of action of the new product probably will be the same as that of the existing product in at least some respects, the consumer—advised by doctors and pharmacists who understand such things—will get less valuable new information and hence less utility from any particular increment of testing of the new product. The $MU(I)$ function will shift downward. Given that the $MU(B)$ function has not changed, the intersection of the $MU(B)$ and $MU(I)$ functions occurs farther to the left, that is, the value of t^* declines. Again intuition agrees. The consumer wants quicker access to the new product because the information yielded by additional testing is less valuable, given that the consumer expects certain "family resemblances" among products.

In such cases the FDA does not act in conformity with consumers' desires. The agency requires every new product to undergo the same testing procedures even though manufacturers have already established the efficacy and side effects of products of the same chemical family.[24] Consumers gain access to the new product no sooner than

[22]In a few instances in recent years the FDA has taken into account foreign information, but these instances are quite exceptional.

[23]Anderson and Anderson (1987) catalogue 192 generic and 1,535 brand-name tested drugs available abroad but not approved for sale in the United States.

[24]The FDA has designated some products for consideration on a "fast track." See Grabowski and Vernon (1983, p. 27). But this distinction represents the attempt of a

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they would if it were completely novel in chemical composition and mechanism of action. Again consumers' satisfaction is thwarted.

Finally, consider how consumers would set t^* for a more threatening condition (e.g., cancer), relative to a less threatening one (e.g., the common cold). In this situation the $MU(B)$ function for the more threatening condition would lie above the $MU(B)$ for the less threatening condition, as each day's delay entails greater foregone benefit in the former case than in the latter. Higher $MU(B)$ functions intersect the $MU(I)$ function farther to the left, that is, at a lower value for t^*. *Ceteris paribus*, the consumer desires quicker access to the drug when it can alleviate a more serious condition.

The FDA does not accommodate this consumer preference. Whether the condition to be treated is life-threatening or simply unpleasant, the agency requires the same rigid, elaborate, and time-consuming testing. Once again, the regulators frustrate the desires of consumers by insisting that one size (testing procedure) fits all (drugs and patients), regardless of the urgency with which consumers desire access to certain drugs. In some cases this regulatory intransigence creates the absurd situation in which the FDA denies dying patients access to a new drug because the manufacturer has not yet established beyond a reasonable doubt that the drug will not harm the users.[25]

Conclusion

Banning a product can never improve the well-being of consumers properly understood, that is, understood as individual consumers' prospective and subjective utility. This proposition remains valid even when risk is incorporated into the analysis. Risk of inefficacy or adverse side effects is simply another dimension of each good, like taste, size, or location, about which the consumer has preferences. Government restrictions have the same effect on consumer welfare

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few bureaucrats to "pick winners." There is no reason to believe that they can do so more successfully than others can. See William Wardell (quoted in Kazman 1990, p. 45) for a case of egregious misclassification. In any event the agency's discrimination usually reflects judgments of life-saving potential rather than the priorities of consumers, who might, for example, place a relatively high value on expediting the availability of a drug to prevent a disfiguring disease such as severe acne or a painful and debilitating disease such as arthritis, even though the disease is not fatal. Moreover, the FDA's "fast-tracking" efforts, along with its attempt to speed the development of so-called "orphan drugs" and other exceptions, have not actually reduced the average time required for approval. See DiMasi, Bryant, and Lasagna (1991, p. 480), Weimer (1982, p. 249), Anderson and Anderson (1987, p. x), Siegel and Roberts (1991, pp. 71–73, 77), Ward (1992, p. 51), and Kazman (1992, p. 6).

[25]Drugs for the treatment of AIDS furnish the outstanding example, but by no means the only one. The AIDS story is told in dramatic fashion by Kwitny (1992).

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regardless of the dimension of the good that is restricted; in this regard there is nothing special about risk.

A simple model incorporating this approach to thinking about risky consumers' goods allows us to establish that the FDA's regulation of drugs (and likewise its regulation of medical devices), both in general and in several of its specific forms, has detrimental effects on consumers' welfare. Nothing in economic theory, correctly understood, supports the imposition of product bans such as those enforced by the FDA through its testing requirements. The bans help no consumer; they definitely hurt some consumers.

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Slavery, Profitability, and the Market Process

Mark Thornton

The economic interpretations of the slave economies of the New World, as well as those social interpretations which adopt the neoclassical economic model but leave the economics out, assume everything they must prove. By retreating from the political economy from which their own methods derive, they ignore the extent to which the economic process permeates the society. They ignore, that is, the interaction between economics, narrowly defined, and the social relations of production on the one hand and state power on the other.[1]

Introduction

The most significant recent development in the study of economic history has been the investigation of the profitability of American slavery made famous in Robert Fogel and Stanley Engerman's *Time on the Cross*. Their book not only rewrote the history of antebellum slavery, it ushered in a completely new methodology of economic history: the cliometric revolution.[2] The book was also very well received by the media, something extremely rare in an academic study.[3]

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[1]Fox-Genovese and Genovese (1983, pp. 35–36).

[2]Also known as the new economic history. Notable among the first cliometric works to appear are Conrad and Meyer (1958) and Fogel (1960).

[3]See David and Temin (1979, p. 213) and Stampp in (David et al., p. 7). Also see Gutman (1975, p. 3) for a description of Fogel and Engerman (1974) as the major methodological assault on traditional history by cliometricians.

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Although often obscured in the technical terms of the scholarly debate, the profitability thesis provides an *ex post facto* justification for the Civil War, one of the most destructive and significant events in American history. From this justification perspective, slavery was profitable and would have continued indefinitely had it not been for the Civil War. Therefore, the Civil War is the primary motive for debating the profitability of slavery. Was slavery *the* cause of the Civil War? Would slavery have eventually collapsed without the war? Or would it have continued? As Gavin Wright, the noted economic historian, put it, "The knowledge that slavery would not have died out through purely economic mechanisms may relate to the historical 'necessity' of the war."[4]

This relationship between the profitability of slavery and the Civil War underlies a more general relationship between the evils of slavery and the market. The literature clearly implies that slavery was an institution of the market and was sustained by market forces. In other words, the bounty of freedom was delivered on the backs of slaves. We are left with the apparent contradiction: "How is it that the arrangement that produced one of the great examples of a reasonably free market system also produced one of the most pernicious examples of a slave labor system?"[5]

The profitability thesis provides one resolution to this contradiction by accepting the Civil War as a political solution for a market-created problem of slavery. According to this revisionist thinking, America's bloodiest and most destructive conflict becomes the solution to the vexing problem of the morally intolerable institution of slavery.[6]

This paper offers an alternative explanation of the profitability of slavery that is consistent with traditional history and economic theory. This explanation, based on economic theory, finds the profitability thesis wrong where it is relevant and irrelevant where it is correct. This explanation disputes the implications that slavery and the slave trade are market phenomena and that slavery was

[4]Wright (1973, p. 459). Wright gives several reasons for the importance of the profitability thesis, all of which are related to the necessity of the Civil War or are of a purely theoretical interest. When discussing Fogel and Engerman's contributions to the profitability thesis, David and Temin (1979, p. 213) caution that the "validity of these findings" are "of crucial importance within the larger structure of Fogel-Engerman's proposed reinterpretation of American Negro slavery."

[5]Ransom (1989, p. 43).

[6]Goldin (1973, p. 84) argues that the war was not a cost-effective emancipation mechanism. However, this justification was established after the fact (when costs tend to matter less) and may well be responsible for the substantial popularity of this revisionist view (also see Goldin and Lewis 1975).

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"profitable." Slavery is found to be theoretically and historically a political institution incapable of existing in open-market competition.[7]

Slavery is demonstrated to have survived in the antebellum South, not because of the market, but because political forces prevented the typical decay and destruction of slavery experienced elsewhere. Modern slavery was abolished throughout the remainder of the Western world without deadly civil war among free people. Brazil, the largest slave state, became the last American country to abolish slavery in 1888. In ancient Greece and Rome, slavery was viewed as a temporary status as slaves were often encouraged to buy their freedom. These slave systems, like the indigenous African variety, could only be sustained through a continuous influx of new slaves obtained through war.

State slave codes restricted and prevented the market-based method of emancipation and therefore precluded a general emancipation of slaves. More precisely, two typical state statutes that significantly reduced the private costs of slavery are shown to have been largely ignored, thereby propagating the impression of slavery's efficiency. Specifically, slave patrol statutes socialized the costs of policing slavery and recapturing runaway slaves by drafting non-slaveholders into slave patrols. Second, state statutes prohibited or effectively restricted private manumission of slaves. Combined with statutes that prevented immigration, required emigration, and restricted the movement and rights of free blacks, the slave codes significantly reduced the costs and risks of the slave owner by reducing and socializing the enforcement costs of slavery.[8]

Time on the Cross: The Profitability of Slavery

Who would have thought that the development of the computer would have a major impact on the historical interpretation of slavery? When Alfred Conrad and John Meyer (1958) published their article, "The

[7]The market should be understood to be a separate and distinct phenomenon from government. "Capitalism" refers to the entire social system that consists of a market economy that is subjected to government intervention. Understanding the results of capitalism therefore requires that the effects of the market process be isolated from the effects of the political process.

[8]All of the great histories of antebellum slavery contain some discussion of the slave codes. In particular, the impact of the codes on the legal status and treatment of slaves is often discussed at some length. While Stampp (1956) recognized that the slave patrols "played a major role in the system of control" and Fogel and Engerman (1974) recognized that manumission laws had been erected, and others have shown that these laws often prevented slaveholders from granting freedom to slaves (see for example Mathias 1973), the economic implications of these statues have largely been ignored.

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Economics of Slavery in the Ante Bellum South," they did just that.[9] Not only had they *established* a new view of slavery, they had inaugurated the cliometric era in the study of economic history. Their computer-processed calculations have become the foundation for the revisionist view that slavery was a profitable institution of the market.[10]

Prior to Conrad and Meyer, the major body of professional opinion held that slavery could not compete against free labor. "On this point the eighteenth and early nineteenth-century authors on agricultural management were no less unanimous than the writers of ancient Rome on farm problems."[11] With reference to the antebellum period, U. B. Phillips found that slaveholding was "essentially burdensome," and that the system of slavery was an "obstacle to all progress."[12] The world-wide collapse of slavery combined with economic opinion and Southern experience to substantiate the traditional view that slave labor could not compete with free labor.[13]

The first major assault on the traditional view of slavery was Kenneth Stampp's *The Peculiar Institution* (1956), where Stampp argued that slavery was a profitable institution. The profitability of slavery was the testable proposition that Conrad and Meyer employed the computer to solve, sending methodological shockwaves through academia that ripple on to this day. The empirical literature questioning and confirming the view that slavery was profitable continues to grow.[14]

Stampp has also argued that slavery was a key factor in the economic growth of the antebellum South. In 1961, Douglass North

[9]"We were explicitly testing the hypothesis that slavery in the South must have fallen before very long *because* it was unprofitable. . . . Our demonstration of that fact means that the imminent demise of slavery in the ante bellum South must be argued on grounds other than unprofitability from now on" (Conrad and Meyer 1983, p. 443).

[10]Butlin (1971) found early contributions such as Conrad and Meyer (1958) and Yasuba (1961) to be incorrect or misleading and their methods and conclusions often unfounded.

[11]Mises (1949, p. 632).

[12]Phillips (1929, p. 275).

[13]Slave labor was considered by many to be a major impediment for the Confederacy and its bid for independence. There were, however, some exceptions to the traditional view such as Lewis Cecil Gray (1933), Thomas Govan (1942), and Robert R. Russel (1938, 1941). Phillips, like many Progressive era academics, was racist and his views are widely considered to have biased his otherwise pathbreaking contributions.

[14]See for example Dowd (1958), Yasuba (1961), Evans (1962), Saraydar (1964), Sutch (1965), Foust and Swan (1970), Parker (1970), Aitken (1971), Butlin (1971), Wright (1973), Engerman and Genovese (1974), Fogel (1975), Vedder and Stockdale (1975), Fogel and Engerman (1977), David and Temin (1979), Wright (1979), Fogel and Engerman (1980), Bateman and Weiss (1981), Field (1988a, 1988b), Grabowski and Pasurka (1989), and Hofler and Folland (1991).

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published his influential *The Economic Growth of the United States, 1790–1860*, where he concluded that King Cotton not only stimulated economic development in the South, but that it was the leading force in the expansion of the entire American economy. This two-pronged attack was so successful that, according to Ransom, the views of U. B. Phillips were "almost totally abandoned."[15]

The pinnacle of this revolution was the publication of Robert Fogel and Stanley Engerman's *Time On The Cross*. Based on an historical method that relies on "technical mathematical points" and the discovery of new data, this approach brought Southern antebellum slavery from a burdensome system to one that is now considered to have been *more* profitable and efficient than the free labor system of the North.

Fogel and Engerman's principal contribution was to find that slavery was highly profitable and 35 percent more efficient than northern family farming. They found that slavery also worked well in the cities. Indeed, as the antebellum South grew rapidly, slavery became ever more entrenched and slaveholders anticipated unprecedented prosperity on the eve of the Civil War. They found slaves to be hardworking, highly motivated, and more efficient than their white counterparts. They found that the general condition of the black family, specifically the extent of sexual exploitation, promiscuity, and slave breeding, to have been greatly exaggerated or untrue. In fact, the material conditions of the slave did not differ substantially from that of the free laborer. They estimated that the slave was allowed to keep 90 percent of lifetime productivity (only 10 percent exploitation) and that the use of whippings was largely kept to a minimum.

Fogel and Engerman's primary objective was to establish the "record of black achievement under adversity." Among the major historical contributions to slavery, Aptheker created the archetype of the rebel, Elkins created the Sambo, and Stampp created the timid rebel. Fogel and Engerman introduced a Horito Alger characterization of the antebellum slave, and while this is surely an exaggeration of fact, the notion of a productive, managerial, and incentive-responsive slave is an important addition to our understanding of the diversity of antebellum slavery. Unfortunately, this historical typecasting, as if one were casting for a movie, is both unnecessary and misleading from an economic perspective. A variety of slave types did of course exist in the antebellum South, differing within and across plantations, states, and time.

[15]Ransom (1989, p. 10).

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Fogel and Engerman's overriding concern with demonstrating the record of black slave achievement tends to confuse the evaluation of the institution of slavery. In the antebellum debate, economic development was the primary economic concern while individual profitability was considered neither an effective defense nor an effective indictment of slavery. The economic argument against slavery emphasized the inferior nature of slave labor, restrictions on entrepreneurship, and the constraint that slavery placed on capital accumulation. Rather than refuting these accusations directly, the antebellum defenders of slavery, like Fogel and Engerman more than a century later, argued that slavery made the Negro more productive and that slaves were better cared for than free labor in the North.

Fogel and Engerman state that their "cliometric research has served to emphasize the deeply moral nature of the antislavery crusade."[16] However, rather than clarifying matters between ethics and economics, Fogel and Engerman have only added (unintentionally) to the condemnation of the market economy by *implication*. In their *Time,* it was the market economy that created and sustained slavery. While implications are difficult to prove, some indication may be gleaned from their chapter headings and subheadings, such as "The Level of Profits and the *Capitalist Character* of Slavery."[17] Based on his thorough empirical critique of Fogel and Engerman's *Time on the Cross*, Herbert Gutman describes their primary message as follows:

> The enslaved and their owners performed as actors and actresses in a drama written, directed, and produced by the "free market." That is the main theme of *Time on the Cross,* its essential message.[18]

Fogel and Engerman are clearer about the implication of their research on the crucial association between profitable slavery and the Civil War. They found that the percentage of free blacks in the population was shrinking and that there was nothing in the statistical record "to encourage the view that southern slavery was on the brink of its own dissolution."[19] The fact that slavery was profitable

[16]Fogel and Engerman (1980, p. 689).

[17]Fogel and Engerman (1974). Also see "*Markets* for Slaves," "*Profits* and Prospects," "The Economic Viability of Slavery," and "The Level of Profits and the *Capitalist Character* of Slavery" (my italics added). It should be stressed that these implications exist not just in Fogel and Engerman (1974) but in much of the literature on slavery.

[18]Gutman (1975, preface).

[19]Fogel and Engerman (1974, p. 37), as quoted from the final sentence of the introductory chapter. Just prior to this concluding statement the authors do mention stricter laws and restriction on voluntary manumission but fail to integrate them into their analysis or discussion of their conclusions.

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"punctured the claim that the Civil War was a tragic blunder." Slavery was not to expire due to economic causes but from "econocide . . . a political execution of an immoral system at its peak of economic success, incited by men ablaze with moral fervor."[20]

A storm of protest developed in the wake of the publication of *Time on the Cross*. Virtually all of the prominent economic historians of the Civil War joined the debate with the combined assault leaving little of Fogel and Engerman's startling conclusions and extensions intact. Their most fundamental problem was said to be systematic errors and misuse of "fact." A second set of problems centered on the misspecification and limitations of models they developed. Even when properly specified, their models often failed to address the issues they wished to consider or failed to support the types of comparisons they proposed, such as comparing northern and southern farming. A third problem with *Time* was that the conclusions which the authors wished to make about the characteristics of the antebellum slave and slaver were not necessarily warranted on the basis of the evidence.[21]

It is beyond the scope of this paper to repeat all the previously published critiques of *Time*. The sheer number and detail of these critiques testify both to the importance and the extent of error in *Time*. Some introduction, however, is in order. Gutman, for example, concludes that on important matters of fact the conclusions of Fogel and Engerman are:

> based upon flawed assumptions about slave culture and slave society, based upon the misuse of important quantitative data, or derived from inferences and estimates that are the result of a misreading of conventional scholarship.[22]

The full import of the *Time* perspective is captured by noted social historian, Kenneth Stampp:

> Fogel and Engerman appear to be so preoccupied with the efficiency of slave agriculture that they disregard irrationality, friction, and conflict. As a result, two cliometricians who want to restore to blacks their true history in slavery have written a book which deprives them of their voice, their initiative, and their humanity. *Time on the Cross*

[20]Fogel (1989, pp. 390, 410).

[21]See Gutman (1975) and David et al. (1976). Another frequently cited problem is the difficulty of following their arguments and checking their sources because of a failure to provide citations, complete references, as well as adding confusion to traditional arguments and the creation of "unacceptable" strawman arguments.

[22]Gutman (1975, p. 8).

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> replaces the untidy world of reality, in which masters and slaves, with their rational and irrational perceptions and their human passions, survived as best they could, with a model of a tidy, rational world that never was.[23]

It is worth noting one particular example of factual error which indicates the types of problems in *Time*. Fogel and Engerman reported that according to 1860 census data there were no slave prostitutes in the city of Nashville, a "fact" that would support their claim that sexual exploitation by whites and promiscuity among blacks had been exaggerated. However, according to the same census, no occupation is listed for any slave in Nashville. The census simply did not list slave occupations.[24]

Time on the Cross which debuted to much fanfare and suffered the torture of a thousand cuts, is still remarkably well regarded in the profession. The authors may have silently (or partially) conceded most of their primary "corrections to the record," but *Time* remains the most generous evaluation of slavery and the authors remain standard bearers of both the cliometric methodological revolution and the profitability thesis, both of which continue to dominate the profession. However, with the dust settled, a primary target of this paper, the profitability thesis, can be examined in specific detail.[25]

Profitability and the Economic Theory of Slavery

Harold Woodman proposed a crucial methodological question when he asked, "Can the economics of slavery be discussed adequately in purely economic terms?"[26] On one hand, general agreement could be reached on the point that the question of slavery cannot be "decided" solely on the basis of economic considerations. On the other hand, it can be argued that slavery has never been discussed in purely economic terms.

The literature on the economics of slavery, for the most part, covers the history of an institution that had important economic consequences, rather than theoretically examining the institution from the strictly economic perspective. Economists of the cliometric bent and otherwise have largely followed the lead of historians. Their

[23]Stampp, in (David et al. 1976, p. 30).

[24]Gutman (1975, pp. 157–62), or Gutman in (David et al. 1976, pp. 153–54).

[25]See Haskell (1979), Schaefer and Schmitz (1979), David and Temin (1979), and Wright (1979).

[26]Woodman (1963, p. 324).

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contribution has been to mechanize, test, and rewrite *history*.[27] Little remains of the profitability thesis except that investment in slaves might have earned a "normal rate of return." This is what an economic theorist would expect, but this is no defense of the viability of slavery. The contributions of Fogel and Engerman concerning slave treatment, productivity, etc. while overstated, can be usefully employed in this and the following section to show how the market process *undermined* the institution of slavery.

First of all, it should be understood that slavery is a political institution that is based on the use of force, not contract.[28] Unfortunately, it is not obvious enough that there is a world of difference between making contracts involving the exchange of labor for money and the institution of slavery where the individual is completely and perpetually subordinated to an owner or master. Market exchanges are voluntary with wages accepted demonstrating the highest valued option. Likewise, it is illogical to argue that an individual can voluntarily sell oneself into slavery. Such an arrangement is not contractual because no matter how willing the "slave" is, individuals are incapable *in fact* of permanently and completely transferring their will and of preventing a change of mind in the future. Labor is alienable, the individual's will is not.[29]

While this logic is virtually indisputable it is also practically irrelevant because slavery is typically not of the "voluntary" type. Indentured servitude was popular as people fled the repressive conditions of Europe for the freedom and opportunity of the colonies. However, this market-based approach did not result in slavery in the accepted use of the term, and as Eric Williams described, "[t]his temporary service at the outset denoted no inferiority or degradation."[30] While this capitalistic approach did not result in slavery in

[27]A similar view was expressed about the New Economic History in general by Douglass North (1965): "Too much of it has been dull and unimaginative, and there seems to be a widespread conviction that econometric techniques, the computer, and running a few regressions can substitute for theory and imagination. . . . Too much of it shows that the writer clearly has no fundamental understanding of the way by which an economy operates. In particular, a lot of it shows that the role of prices in resource allocations and the implication of price behavior have completely eluded the writer."

[28]Thompson (1941, p. 60).

[29]The labor of an assembly line worker is physically given and received. The individual's will, however, can never be physically given or received. Slavery, therefore, can be distinguished from labor contracts and indentured servitude where a certain amount of labor is to be given in the exchange. The promise is neither perpetual nor does it involve inalienable components of the individual. See Rothbard (1982).

[30]Williams (1944, p. 10).

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fact, it did take on many appearances of slavery under the watchful eye of the Colonial Board which was established in 1661 under the leadership of the King's brother in order to "control" the trade.[31] Nonetheless, real slavery as we understand it is not a result of voluntary agreement.

The African slave trade is often thought to have been introduced by Europeans as an instrument of capitalistic aggression. However, Robin Law has clearly shown that slavery existed in Africa long before contact with European traders.[32] In fact, slavery was a central, indeed prominent, institution of African statecraft.

Prior to extensive European contact, Slave Coast states closely controlled their societies, including the emerging marketplace. The state, led by an hereditary "king," was based largely on militarism geared for the personal material gain of the leaders of the state. At the heart of their motivation, as exhibited even in their military tactics, was the taking of captives for sale as slaves.[33] The absolutism of this form of slavery was amply demonstrated by their brutality and aggression against slaves. Some of the captives from the losing army would be tortured and decapitated with the head presented to the victorious army's king. Presumably, many of those tortured and killed had been injured during the battle and were therefore of little economic value to the victors.[34]

This form of absolute slavery was supplemented by the more general slavery of the populace. Indeed, the head of all inhabitants "belonged" to the king. This established the right of the king to all persons, places, and possessions throughout the kingdom. It was also the basis of the king's right to administer "justice."[35] Of course the normal measures of partial slavery, such as forced labor and taxation, were a normal part of Slave Coast life.[36]

[31]Ibid., p. 14–18.

[32]Law (1991).

[33]One of the few descriptions of early African military tactics indicates that armies would battle to maximize the number of captives which could be sold as slaves.

[34]Tales of African savagery and cannibalism have often been exaggerated. According to Lovejoy (1983) though, cannibalism and human sacrifice were important components of indigenous African slavery. It should also be remembered that slavery and slaughter were also quite common in Europe at this time. Among the important economic distinctions between western Africa and western Europe was the former's lack of written language and ocean travel.

[35]To help reinforce the perception of the king's monopoly on law and order all justice was absent after the death of a king and before his successor was named. In the absence of the king's system of "justice" many crimes, including murder, would take place during this period and go unpunished. This situation made the populace eager to have a new king.

[36]Law (1991).

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Originally, it was believed that the militarism and slavery exhibited in the development of the Dahomian state was the result of European contact.[37] However, these traits existed in the predecessor states of Allada and Whydah. Militarism "clearly had its roots in the political culture of these earlier kingdoms." In fact, when the Portuguese began trading in Africa in the 1480s, they purchased slaves largely for resale within Africa.[38] Therefore, while the rise of the Dahomian state may in part be attributed to European contact and the expansion of the Atlantic slave trade, it would be incorrect to impart the total responsibility on the Europeans.[39]

The Atlantic slave trade, rather than being the result of a market process, developed under the confluence of two non-market factors. First of all, slavery already existed in the tribal African societies, which were the sources of slaves, before the arrival of Europeans. Second, the slave trade was not founded by private firms but was established by the colonial powers which instituted monopolies to exploit the indigenous slavery. The Dutch West India Company was chartered in 1621, and the Royal Company of Adventurers for the importation of Negroes was formed in 1662 (Royal African Company). These organizations were companies in name only. They were governmental military structures that had been organized on the basis of the profit motive to allow for independent decision making on locations in Africa which were too distant from Europe for direct control. Under these conditions, they were able to maximize their efficiency in generating slaves, revenues, and domestic influence. Therefore, while it is true that the "Negroes therefore were stolen in Africa to work lands stolen from the Indians," it would be more accurate to place most of the blame for these crimes on the governments involved.[40]

One area of general confusion among economists and other social scientists concerns the origins of slavery in the American colonies. This confusion is amply exhibited by Thomas Sowell who states that, "It is not known when slavery began, because the first *captured* Africans became indentured servants, like an even larger number of

[37]Davidson (1961).

[38]Law (1991, pp. 97, 116).

[39]Dahomey in the interior conquered Weme in 1716, Allada in 1724, and Whydah by 1728. Whydah was located on the coast where many of the trading centers were located. Allada was earlier the middleman state located between Whydah and the interior controlled by Dahomey. There was a constant dispute over control of the slave trade that would often degenerate into war and the intermittent disruption of the slave trade. The rise of Dahomey could therefore be viewed as a successful attempt to vertically and geographically integrate the slave trade in Africa.

[40]Williams (1944, p. 9).

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contemporary whites."[41] It should have been obvious to Sowell that slaves, not free labor, must be captured. The general confusion on this issue most likely arose from a debate about the dating of the origins of American slavery, a debate which was itself ignited over concern about modern race relations rather than the historical record. This "debate" might never have developed, if historians had depended more on the facts rather than on "interpretation." There is no persuasive evidence that Negroes were ever treated like white servants upon their arrival in 1619 and 1640 when their status as slaves was first indicated in legal records.[42]

What is certain is that they were slaves *before* they arrived in America. Because slavery was not accounted for in British common law, it is logical that the legal system of slavery developed only after the importation of African slaves. The legal structure that attended the introduction of African slaves took time to develop, developing first in custom and then in law. "[I]n short slavery as Americans came to know it, was not accomplished overnight."[43]

It was also accomplished with the help of various government programs and subsidies. For example, a British Parliamentary subsidy for American indigo was a primary reason for the proliferation of slavery in South Carolina. According to Rosengarten, it was not until England enacted a subsidy for Carolina indigo, in order to suppress indigo from the French West Indies, that the black slave population expanded and surpassed the white population in the sea island region. The subsidy was of course revoked during the American Revolution, but it left behind "a social structure and a labor routine," that is, a slave-based economy.[44]

The basic analysis of slave versus free labor is well known. Contractual labor represents a symmetrical relationship that involves a coordination of individuals' values, efforts, abilities, and resources. Slave labor is an asymmetrical relationship of domination and subordination. Slave labor can possibly be efficient for the slave owner, but cannot be viewed as such for the slave or for society as a whole.[45]

[41]Sowell (1980, p. 317), emphasis added. Also see Ransom (1989, p. 41), for a very similar statement.

[42]Jordan (1962, p. 22).

[43]Ibid., pp. 18–29 and Sirmans (1962). There were of course free blacks in the Colonies due to manumission and escape.

[44]Rosengarten (1986, pp. 48–49).

[45]I can agree with Fenoaltea (1981, pp. 307–8), that the term "relative productivity" should replace efficiency with respect to slavery but not that the academic combatants should just drop the whole matter and say that "a good time was had by all." The reputation of economic theory and laissez-faire market capitalism was caught in the crossfire of this debate and has yet to be vindicated.

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In a market economy, all market participants perform economic calculations, but in the slave economy only the slave owners are allowed to perform such calculations. We therefore expect less calculation and entrepreneurship in the slave economy. Slave labor within a market economy does however have a special advantage over the socialist economy. Slaves in a market economy are viewed as a capital asset and typically put to their highest valued market use. Therefore, the slave is protected against depreciation and often targeted for appreciation. Slaves in a socialist economy, where there is no ownership, are typically viewed as a consumption item to be depreciated. The free-market orientation of the antebellum economy is a necessary prerequisite for the success of antebellum slavery and appreciation in the slave population and slave standards of living.[46]

The productivity of slaves is less than that of free labor because in slavery productivity is dissociated from economic reward. The competitive disadvantages of slave labor are revealed when the requirements of labor begin to exceed those of draft animals. One common means of improving productivity, especially popular among governments which own slaves, is the infliction of punishment for unsatisfactory results. This method has the disadvantage of increasing the costs of operations and the depreciation of the slaves, both in terms of productivity and market value.[47] According to Ludwig von Mises:

> experience has shown that these methods of unbridled brutalization render very unsatisfactory results. Even the crudest and dullest people achieve more when working of their own accord than under the fear of the whip.[48]

In order to stimulate "working of their own accord," owners must offer incentives for productivity and loosen the bonds of slavery. The more productive and capital-using applications of labor require even greater incentives and freedoms if the master is to expect effective decision making and care of his physical capital from the slave. The self-interest of the master therefore can reduce the degree of slavery,

[46]I am grateful to Hans Hoppe for bringing this important point to my attention.

[47]Scars from whippings would indicate that a slave for sale was a past and potential runaway and thereby reduce the value of the slave. Canarella and Tomaske (1975, pp. 628–29) demonstrate that the market will minimize "the dual inefficiencies of sadism and paternalism by driving the high cost firms out of the industry." Unfortunately, they find that "capitalist slavery places the slave in a tragic position." Due to the limitations of their model they can find "no mechanism which as a result of market forces or the profit motive necessarily ameliorates the condition of the slave."

[48]Mises (1949, p. 629).

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resulting in a relationship that resembles family or friendship rather than a Nazi work camp.[49]

The market not only reduces the degree and burden of slavery, it can eliminate slavery altogether through manumission. There are three basic categories of manumission.

> PURCHASE: A slave may accumulate wages and bonuses to purchase freedom. A free person, such as a friend or relative, may purchase the slave into freedom. This is more likely as free labor encroaches into slave labor regions and was often facilitated by low asking prices of slaveholders.
>
> WILL: A slaveholder may grant freedom to a slave in a last will and testament as a reward for years of faithful service or as religious penance.
>
> SPECIAL: A slaveholder may grant freedom to a slave for an extraordinary act, such as saving the owner's life. Slaveholders may grant freedom to commemorate special events such as a marriage or birth. Owners and government may grant freedom to slaves serving in defense of the country or for informing on riot or assassination attempts.

The rate of manumission could be expected to increase as competition from free labor reduced the expected returns from slavery. In other words, every manumission not only reduces slavery by one soul, it provides a further catalyst for the ultimate destruction of slavery: proximate free labor competition.

The issue of the viability or survivability of antebellum Southern slavery must take several special factors into account. First, free labor was relatively scarce in the cotton belt and generally served as a complement to slave labor instead of a competitive factor. Second, the weather and isolation of the cotton belt reduced the supply of free labor and made comparisons with more temperate and metropolitan regions difficult.[50]

Third, cotton as a product was simple to produce. As quality and complexity of production increases, slave labor becomes less

[49]Ibid. Mises notes that the "master becomes intent upon rousing the slave's zeal and loyalty through reasonable treatment. There develop between lord and drudge familiar relations which can properly be called friendship." This type of relationship is infamous in the antebellum period. See for example England (1943, p. 42) as one example of the development of this type of relationship.

[50]A high percentage of the free labor of the slave states was located in the more temperate areas such as the mountainous and hilly regions and in the cities on the sea coast (away from the slave economy).

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competitive with free labor. Fourth, the extensive availability of fertile land associated with the opening of the old American Southwest was an added factor in slavery's relative success. Slaves have to be fed and clothed year round so that when they could not be easily kept productive (such as building and maintaining roads, chopping fire wood, lumber, and clearing forest land), free labor would tend to dominate.[51]

The complex issues involved in the choice between slavery and free labor have been unfortunately simplified to the single issue of profit. Profit is a theoretical concept that explains the reallocation of resources in the market economy. The profitability-of-slavery thesis provides various calculations of estimated accounting profits of antebellum cotton plantations that employed both free and slave labor during the Industrial Revolution. We would certainly expect to see profitable firms during this tumultuous period. However, the important question is what factors account for this profitability. Was it the rapid increase in the demand for cotton, cheap fertile land, entrepreneurial management, slavery, or some combination of these factors? While this is a difficult issue to resolve precisely, the case for slave labor can be easily dismissed.[52]

A prime reason for the belief in the viability of slavery is that prices of slaves were higher at the end of the antebellum period than at the beginning. In fact, prices were higher than ever in the year before the Civil War, but these high prices were clearly the result of factors other than the inherent nature of slave labor. In fact, higher slave prices can be used to address one aspect of *Time on the Cross* that has apparently gone unchallenged, the authors' alleged disproof of the "natural limits thesis." This thesis claims that slavery would have disappeared under the pressure of scarce fertile land and urban expansion.[53]

[51]The availability of low-cost fertile land was necessary not only for the reasons described by the "natural limits thesis," but because of the limitations on year-round productive activities for slave labor versus their year-round requirements. In a sense, slave labor was able to exploit fertile land by trading their off-peak time for fertilized land. See Phillips (1918), Domar (1970), and Earle (1978) for an elaboration of this point.

[52]See for example David and Temin (1979) and Schaefer and Schmitz (1979). Despite the strong case against the profitability of slavery, it should not be forgotten that "profit" is based on the subjective evaluations of the individual and that an individual or group may "profit" from an activity that is otherwise debilitating socially or in the crude economic sense. This is particularly true of the culture that developed in Colonial Virginia based on the (now largely foreign) idea of hegemonic liberty (Fischer 1989). Indeed, Cairnes (1862, p. 87) found that "the real strength of slavery" was the desire on the part of the "mean whites" for political power and social status.

[53]Cairnes (1862) and Ramsdell (1929).

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Fogel and Engerman argue that slavery would not have disappeared without the Civil War. In fact, their estimates indicate that slave prices would have increased by more than 50 percent by 1890. While there are certainly many easily recognizable technical problems involved in such estimates, the most significant problem is that their estimate plays directly into the hands of the economic theory of slavery and the natural limits theorists. Higher slave prices would only serve to signal the market to discover substitutes for slave labor. Specifically, if the price of slaves did continue to rise, the market would have responded with substitutes such as free labor and labor saving equipment, such as mechanical agricultural devices to pick cotton.[54]

Slavery and the Political Process in the Antebellum South

Despite all the supposed natural advantages of slave labor in the Southern antebellum economy, slavery was fleeing from both the competition of free labor and urbanization towards the isolated virgin lands of the Southwest. More importantly, the character of antebellum slavery had changed to reflect the "loosening of bonds." Slaves were given increasing responsibility, receiving professional training, and beginning to possess a good deal of independence and property within the plantation. Indeed, the slave was moving off the plantation, becoming in effect, free labor for hire. As Clement Eaton described:

> Behind the facade of increasing values of slave property there had been ceaselessly at work for at least two decades a slow and subtle erosion of the base of the institution. The disintegrating forces were strongest and most noticeable in the Upper South and in the towns and cities, where the growing practice of obtaining the service of slave labor by hire instead of by purchase was invisibly loosening the bonds of an archaic system.[55]

Despite the change in the character of slavery and the material economic improvement in antebellum slave life relative to other slave economies, very little progress had been made towards slavery's legal abolition. Although they were discussed, no emancipation or compensation schemes were seriously considered before the Civil War.[56] Things also appeared bleak in terms of market-based emancipation. As Fogel and Engerman noted, the percentage of the free black population in

[54]Genovese (1961, pp. 58–59).
[55]Eaton (1960, p. 663).
[56]Goldin (1973).

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the South actually fell from 1830 to 1860. Kenneth Stampp also concluded that "[T]here was no evidence in 1860 that bondage was a 'decrepit institution tottering towards a decline' " and that there was no "reason to assume that masters would have found it economically desirable to emancipate their slaves in the foreseeable future."[57]

"[T]he failure of voluntary emancipation" represents a divergence between economic theory and our understanding of the market economy on the one hand and real world results on the other.[58] In order to explain such puzzles, economists normally look at institutional rigidities, changes in relative scarcity, and most especially to government interventions in the economy.[59] The positive contribution of this paper is to *introduce* such an explanation: the role that certain slave codes played in the profitability and survival of slavery in the antebellum South. Despite the almost obvious implications of the slave codes, this form of government intervention has been ignored as an economic factor in the profitability and perpetuation of slavery.[60] While the direction of this approach could have been derived from the work of Genovese,[61] and while Stampp certainly discussed the subject at length, it seems that Ludwig von Mises made the clearest statement of the connection between government intervention and the inability of markets to bring down antebellum slavery:

> The abolition of slavery and serfdom could not be effected by the free play of the market system, as political institutions had withdrawn the estates of the nobility and the plantations from the supremacy of the market.[62]

The political institutions that had withdrawn the plantation from the supremacy of the market were slave code statutes. While all the statutes had some impact, the statutes that required slave patrols and the laws that prohibited the manumission of slaves are of primary importance.

[57]Stampp (1956, pp. 417–18). Like many others, Stampp bases his conclusions on evidence of high slave prices in the 1850s, dismissing any notion that the bubble would ever pop or that free labor "under any circumstances can be employed more cheaply than slave."

[58]Stampp (1956, p. 235).

[59]Fogel and Engerman base their revision of the record on "technical mathematical points."

[60]Historians have raised the issues with respect to the status of the slave, as an aspect of the legal system and as a factor in modern racial problems. See for example, John Hope Franklin (1956), John Anthony Scott (1984), and Mark Tushnet (1981).

[61]Genovese (1961).

[62]Mises (1949, p. 632).

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The patrol statutes required all white males to participate in slave patrol duty. The state required counties to establish regular patrols, and the counties in turn placed responsibility for organizing patrols on local judges and constables. These officials appointed a series of rotating patrol leaders who would be responsible for organizing and reporting on the activities of their patrols. Failure to participate in the patrols or to carry out organizing responsibilities would result in a series of escalating fines.

In order to prevent slaves from escaping, the patrol was responsible for patrolling the roads at night, monitoring the movement of blacks by checking their passes, and inspecting slave residences.[63] The compensation the patrollers received for being drafted into service was the violence they inflicted upon slaves and the money they received for capturing and selling unclaimed runaway slaves. Both sources of compensation served to increase the effectiveness of the patrols.[64]

Statutes were also established in the slave states that restricted or prohibited the right of an owner to manumit slaves. Restrictions precluded slaves from buying their freedom, owners from granting freedom, and owners from manumitting their slaves in a last will and testament. Sometimes these prohibitions were outright and binding while at other times the restrictions only served to complicate and frustrate the owners attempts to free slaves. Near the end of the antebellum period, an owner would have to transport slaves to free states, before manumission, in order to ensure the freedom of their slaves.

While these statutes date back to the mid-eighteenth century, a significant relaxation occurred after the American Revolution. During this time, a large number of slaves were freed both in slave states as well as in states that had newly prohibited slavery. However, a growing free black population, an increased threat of slave revolts, and an increasingly vocal abolitionist movement led the Southern states to reenact severe slave code statutes relating to manumission and slave patrols.[65]

The obvious implications of these statutes was a reduced growth rate in the free black population. If owners could not manumit their

[63]All of these duties were carried out on a random basis so as to confuse and terrorize slaves and increase the effectiveness of the system.

[64]It might seem that the violence towards slaves would be viewed as counterproductive by the slaveowners. However, it did serve the purpose of instilling fear in the entire slave population and therefore it achieved its primary goal of reducing the number of escape attempts.

[65]See for example, Turtle (1991).

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slaves then the free black population could not grow as it otherwise might have. Slave patrols reduced the possibility of successful escape as well as the number of escape attempts.[66] The patrols therefore also contained the free black population by reducing escape attempts and the percentage of successful escapes.

Another obvious impact of the patrol statutes was the shift of the cost of guarding slaves and escape prevention from the slave owner onto the general population, as white males who owned no slaves were required to participate in the patrols. This socialization of police costs improved the profitability of slave ownership and reduced the supply of free labor by acting as a tax on it.[67]

The interaction effect of the two codes also affected the costs and profitability of slavery. If slaves could not be manumitted, then most blacks were slaves, thereby making the task of the slave patrols easier. The ability to detect and identify possible runaways was further strengthened by statutes that required all manumitted slaves to emigrate the state or county, prohibited the immigration of free blacks into a state, and placed fines or prohibited the existence of any free black in residence. Reduced likelihood of escape also increased the slaves' capital value.

The literature on the emancipation of American slaves pays little attention to the use of private manumission. There are several reasons for this neglect. First, in the decade prior to the Civil War only 20,000 slaves were officially manumitted out of a slave population of several million.[68] Second, it is rejected as a viable option for those who feel it is ethically preposterous that slaves and non-slaveholders should pay to break the bonds of involuntary servitude. There is also the question of time. Given the population growth of slaves, even an aggressive rate of private manumissions might never eliminate slavery entirely.

[66]Slaves were not only aware of the slave patrols, they were afraid of them. Slave patrols were largely unrestrained by law and would often beat, torture, and kill slaves even when the slaves had passes or were in their homes.

[67]The patrollers were fined for failure to carry out their assigned tasks. The draftee might be compensated for his efforts in some cases (i.e., selling unclaimed slaves) and some draftees were economic beneficiaries of the slave economy even when they did not own any slaves. It has also been noted by many authors that the poor whites had been duped (or threatened) into accepting the slave owners' racist ideology and therefore might have been more accepting of the system. Their low opportunity cost may also help explain their apparent willingness to go along with the patrol requirements. Cairnes, in fact, described the poor whites as near-savages who relied largely on hunting and gathering and were prone to irregular violence. Based on these attributes, the poor whites were ideally suited to patrol duty. See Yanochik (1993) for more detailed information on the slave patrols.

[68]Rogers (1918, p. 54).

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Other alternatives seem equally problematic. Support for general manumission at the state level was highly unlikely in states with large slave populations. Slaveholders were not only economically powerful, they were politically powerful in their legislatures in southern states. The market value of the entire slave population prior to the Civil War has been estimated at $2.7 billion, and plantation owners were convinced that slave labor was the only basis for large scale plantation agriculture in the semi-tropical south. While some have suggested that such a scheme would have been less costly than the Civil War, there was apparently no viable political mechanism to undertake such a massive transfer. Radical abolitionist sentiment was probably never more than a small minority of the population. The inability to solve the problem of slavery is generally attributed to the growth of sectionalism, party system breakdown, secession, and at least indirectly, the Civil War.

The low rate of private manumissions was not due to a lack of interest, but rather to prohibitions and restrictions on manumission in the slave states. In the absence of these government interventions, a higher rate of manumission could have dramatically increased the size of the free black population and decreased the size of the slave population. An increased free black population would have also undermined the effectiveness of slave hunters and slave patrols. The free black as free worker would have put increased pressure (geographically) on slavery. A decreased slave population and lower slave prices would have increased the likelihood of the enactment of general manumission, especially in the border states.

What we do know is that by 1830 most slave states had enacted extremely stringent laws to maintain slavery.[69] Most slaves were effectively confined on the plantation, most owners were prohibited from legally freeing their slaves, and life for the free black in the slave states was tenuous at best, illegal at worst. The complexity of the slave codes and slave economy makes it extremely difficult to determine what would have happened in the absence of these state codes. However, if slaveowners had really had the "absolute power and authority over his negro slaves" and their own lives, history would have been radically different.[70]

Free black population in the slave states increased throughout

[68]Rogers (1918, p. 54).

[69]See Hurd (1862), and Cobb (1858).

[70]From John Locke's *Fundamental Constitutions of Carolina* as quoted in Sirmans (1962, p. 463). In other words, if slaveowners had had more personal control over their property, more slaves would have been freed and the character of slavery would have been much different.

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the antebellum period, with the greatest growth in the early decades and in the Upper South. As state statutes were enacted in the early 1800s against manumission and immigration of free blacks, the rate of increase in the free black population slowed rapidly. In the final decades of the antebellum period the rate of increase in the free black population fell below the rate of increase of the slave population. These population figures clearly indicate the effect of laws against manumission.

Between the 1790 and 1800 census, the free black population of America increased by over 82 percent and in the South Atlantic states by over 97 percent. Between 1800 and 1810 the free black population in the South Atlantic states increased by over 61 percent. The total free population increased from 8.5 percent to almost 16 percent of the total black population between 1790 and 1810.[71] As states enacted statutes against manumission and immigration, and requiring slave patrols, the growth of the free black population decreased, fell below the rate of growth in the slave population, and was reduced to a trickle in the decade prior to the Civil War.[72]

If the free black population in the South Atlantic states had grown at the same rate between 1800 and 1860 as it did between 1790 and 1800, every slave in the South Atlantic states would have been freed twice by 1860, the equivalent of virtually every slave in the country.73 Using the slower growth rate between 1790 and 1810 (88 percent), every slave in the region would have been freed 1.5 times. While this is clearly a hypothetical calculation, it does indicate that in the absence of slave codes the slave population would have been a small fraction of its actual size and in a range where general emancipations would have been possible.[74]

While economists (as economists) will no doubt appreciate the apparent cost-effectiveness of this approach, the notion of a gradual market-based emancipation will no doubt be morally objectionable to extreme abolitionists.[75] However, it must be remembered that historical

[71]This growth in part may be due to the window of opportunity between periods when it was illegal to manumit slaves.

[72]Rogers (1918, pp. 53–57). Only 1,467 slaves manumitted in 1850 and approximately 3,000 in 1860, with about 20,000 manumissions taking place during the decade.

[73]South Atlantic states here do not include Alabama, Mississippi, Tennessee, Louisana, Arkansas, and Texas.

[74]The South Atlantic states include Delaware, Maryland, Virginia, North and South Carolina, and Georgia the only states with consistent data for the entire period.

[75]I denote extreme abolitionists as those who would go to any extreme (including war) to emancipate slaves in other nations. The term radical abolitionist is reserved for those abolitionists who detest slavery in its less obvious forms such as conscription, confiscation, eminent domain, and taxation.

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experience of government-style emancipations, such as the Civil War, indicates that they are very costly, and in most cases, hardly effective in uplifting the former slaves. It was just this historical experience that led John Cairnes to suggest that gradual abolition of slavery was the most effective in promoting the interests of the slaves.[76]

Summary and Conclusion

This paper maintains that slavery is always and everywhere a political rather than a market institution. The historical record of slavery is examined for the suggested exceptions to this rule. This study only confirms the logical necessity of government's role in slavery.

The profitability-of-slavery thesis is incorrect where relevant and irrelevant where correct. John Cairnes, who identified the problem in *The Slave Power*, found that antebellum slavery survived under "a democracy, an uncontrolled despotism, wielded by a compact oligarchy." The historical record strongly suggests that the state statutes that prohibited the private manumission of slaves and mandated slave patrols are the reasons why slavery survived as long as it did in the American South.

It could be argued that these codes were part of the "peculiar institution" and were unlikely to be repealed. However, failing properly to identify the causes of slavery's survival would be like complaining that "business" is doing little to alleviate high teenage unemployment without mentioning the minimum wage law. Not only is the "free market" exonerated from the evil of slavery, but the full blame for slavery and even the Civil War is placed back on government.

[76]When speaking of the American case, Cairnes (1862, p. 170) suggested that the Union merely invade and eliminate slavery west of the Mississippi and leave slavery in the remaining states to strangle itself.

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How is Fiat Money Possible? — or, The Devolution of Money and Credit

Hans-Hermann Hoppe

Fiat money is the term for a medium of exchange which is neither a commercial commodity, a consumer, or a producer good, nor title to any such commodity: i.e., irredeemable paper money. In contrast, *commodity* money refers to a medium of exchange which is either a commercial commodity or a title thereto.

There is no doubt that fiat money is *possible*. Its theoretical possibility was recognized long ago, and since 1971, when the last remnants of a former international gold (commodity) standard were abolished, all monies, everywhere, have in fact been nothing but irredeemable pieces of paper.

The question to be addressed in this paper is rather *how* is a fiat money possible? More specifically, can fiat money arise as the natural outcome of the interactions between self-interested individuals; or, is it possible to introduce it without violating either principles of justice or economic efficiency?

It will be argued that the answer to the latter question must be negative, and that no fiat money can ever arise "innocently" or "immaculately." The arguments advancing this thesis will be largely constructive and systematic. However, given the fact that the thesis has frequently been disputed, along the way various prominent counterarguments will be criticized. Specifically, the arguments of the *monetarists*, especially Irving Fisher and Milton Friedman, and of some *Austrian* "free bankers," especially Lawrence White and George Selgin, in ethical and/or economic support of either a total or a fractional fiat money will be refuted.

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The Origin of Money

Man participates in an exchange economy (instead of remaining in self-sufficient isolation) insofar as he prefers more goods over less and is capable of recognizing the higher productivity of a system of division of labor. The same narrow intelligence and self-interest is sufficient to explain the emergence of a—and ultimately only one—commodity money and a—and ultimately only one, world-wide—monetary economy.[1] Finding their markets as buyers and sellers of goods restricted to instances of double coincidence of wants (A wants what B has *and* B wants what A has), each person may still expand his own market and thus profit more fully from the advantages of extended division of labor if he is willing to accept not only directly useful goods in exchange, but also goods with a higher degree of marketability than those surrendered. For even if they have no direct use-value to an actor, the ownership of relatively more marketable goods implies by definition that such goods may in turn be more easily resold for other, directly useful goods in later exchanges, and hence that their owner has come closer to reaching an ultimate goal unattainable through direct exchange.

Motivated only by self-interest and based on the observation that directly traded goods possess different degrees of marketability, some individuals begin to demand specific goods not for their own sake but for the sake of employing them as a medium of exchange. By adding a new component to the pre-existing (barter) demand for these goods, their marketability is still further enhanced. Based on their perception of this fact, other market participants increasingly choose the same goods for their inventory of exchange media, as it is in their own interest to select such commodities as media of exchange that are *already* employed by others for the same purpose. Initially, a variety of goods may be in demand as common media of exchange. However, since a good is demanded as a medium of exchange—rather than for consumption or production purposes—in order to facilitate future purchases of directly serviceable goods (i.e., to help one buy more cheaply) and simultaneously widen one's market as a seller of directly useful goods and services (i.e., help one sell more dearly), the more widely a commodity is used as a medium of exchange, the better it will perform its function. Because each market participant naturally

[1]See on the following, in particular Carl Menger, *Principles of Economics* (New York: New York University Press, 1981); idem, *Geld*, in Carl Menger, *Gesammelte Werke*, vol. 4, F. A. Hayek, ed. (Tübingen: Mohr, 1970); Ludwig von Mises, *Theory of Money and Credit* (Irvington-on-Hudson, N.Y.: Foundation for Economic Education, 1971); idem, *Human Action: A Treatise on Economics* (Chicago: Regnery, 1966).

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prefers the acquisition of a more marketable and, in the end, universally marketable medium of exchange to that of a less or non-universally marketable one, "there would be an inevitable tendency for the less marketable of the series of goods used as media of exchange to be one by one rejected until at last only a single commodity remained, which was universally employed as a medium of exchange; in a word, money."[2]

With this, and historically with the establishment of the international gold standard in the course of the nineteenth century (until 1914), the end desired through any one market participant's demand for media of exchange is fully accomplished. With the prices of all consumer and capital goods expressed in terms of a single commodity, demand and supply can take effect on a world-wide scale, unrestricted by absences of double coincidence of wants. Because of its universal acceptability, accounting in terms of such money contains the most complete and accurate expression of any producer's opportunity costs. At the same time, with only one universal money in use—rather than several ones of limited acceptability—the market participants' expenditures (of directly serviceable goods) on holdings of only indirectly useful media of exchange are optimally economized; and with expenditures on indirectly useful goods so economized, real wealth, i.e., wealth in the form of stocks of producer and consumer goods, is optimized as well.

According to a long—Spanish-French-Austrian-American—tradition of monetary theory,[3] money's originary function —arising out of the existence of uncertainty—is that of a *medium of exchange*. Money *must* emerge as a *commodity* money because something can be demanded as a medium of exchange only if it has a pre-existing barter demand (indeed, it must have been a highly marketable barter commodity), and the competition between monies *qua* media of exchange inevitably leads to a tendency of converging toward a *single* money—as the most easily resold and readily accepted commodity.

In light of this, several popular notions of monetary theory are immediately revealed as misguided or fallacious.

What about the idea of a commodity reserve currency? Can bundles (baskets) of goods or titles thereto be money?[4] No, because

[2]Mises, *Theory of Money and Credit*, pp. 32–33.

[3]See Murray N. Rothbard, "New Light on the Prehistory of the Austrian School," in *The Foundations of Modern Austrian Economics*, E. G. Dolan, ed. (Kansas City: Sheed and Ward, 1976); Joseph T. Salerno, "Two Traditions in Modern Monetary Theory," *Journal des Economistes et des Etudes Humaines* 2, no. 2/3 (1991).

[4]On commodity reserve proposals see B. Graham, *Storage and Stability* (New York: McGraw Hill, 1937); F. D. Graham, *Social Goals and Economic Institutions* (Princeton:

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bundles of different goods are by definition less easily saleable than the most easily saleable of its various components, and hence commodity baskets are uniquely *unsuited* to perform the function of a medium of exchange (and it thus is no mere accident that no historical examples for such money exist).

What about the—Friedmanite—idea of freely fluctuating "national monies" or of "optimal currency areas?"[5] It must be regarded as absurd, except as an intermediate step in the development of an inter-national money. Strictly speaking, a monetary system with rival monies of freely fluctuating exchange rates is still a system of partial barter, riddled with the problem of requiring double coincidence of wants in order for exchanges to take place. The lasting existence of such a system is dysfunctional of the very purpose of money: of facilitating exchange (instead of making it more difficult) and of expanding one's market (rather than restricting it). There are no more "optimal"—local, regional, national or multi-national—monies or currency areas than there are "optimal trading areas." Instead, as long as more wealth is preferred to less and under conditions of uncertainty, just as the only "optimal" trading area is the whole world market, so the only "optimal" money is *one* money and the only "optimal" currency area the entire globe.

What about the idea, central to monetarist thought since Irving Fisher, that money is a "measure of value" and of the notion of monetary "stabilization?"[6] It represents a tangle of confusion and falsehood. First and foremost, while there exists a motive, a purpose for actors wanting to own media of exchange, no motive, purpose or need can be discovered for wanting to possess a measure of value. Action and exchange are expressive of *preferences*: each person values what he acquires more highly than what he surrenders—*not* of identity or equivalency. No one ever needs to *measure* value. It is easily explained why actors would want to use cardinal numbers—to count—and construct measurement instruments—to measure space,

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Princeton University Press, 1942); also F. A. Hayek, "A Commodity Reserve Currency," *Economic Journal* 210 (1943); Milton Friedman, "Commodity-Reserve Currency," *Journal of Political Economy* (1951).

[5]See Milton Friedman, "The Case for Flexible Exchange Rates" in Friedman, *Essays in Positive Economics* (Chicago: University of Chicago Press, 1953); idem, *A Program for Monetary Stability* (New York: Fordham University Press, 1959); also *Policy Implications of Trade and Currency Zones: A Symposium* (Kansas City: Federal Reserve Bank of Kansas City, 1991).

[6]See Irving Fisher, *The Purchasing Power of Money* (New York: Augustus Kelley, 1963); idem, *Stabilizing the Dollar* (New York: Macmillan, 1920); idem, *The Money Illusion* (New York: Adelphi, 1929); Milton Friedman, "A Monetary and Fiscal Framework for Economic Stability," *American Economic Review* (1948).

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weight, mass and time: In a world of quantitative determinateness, i.e., in a world of scarcity, where things can render strictly limited effects only, counting and measuring are the prerequisite for successful action. But what imaginable technical or economic need could there possibly be for a measure of *value*?

Second, setting these difficulties aside for a moment and assuming that money indeed measures value (such that the money price paid for a good represents a cardinal measure of this good's value) in the same way as a ruler measures space, another insurmountable problem results. Then the question arises "what is the value of this measure of value?" Surely it must have value just as a ruler must have value, otherwise no one would want to own either one. Yet it would obviously be absurd to answer that the value of a unit of money—one dollar—is one. One what? Such a reply would be as nonsensical as answering a question concerning the value of a yardstick by saying "one yard." The value of a cardinal measure cannot be expressed in terms of this measure itself. Rather, *its* value must be expressed in ordinal terms: It is better to have cardinal numbers and measures of length or weight than merely to have ordinal measures at one's disposal. Likewise it is better if, because of the existence of a medium of exchange, one is able to resort to cardinal numbers in one's cost-accounting, rather than having to rely solely on ordinal accounting procedures, as would be the case in a barter economy. But it is impossible to express in cardinal terms *how much* more valuable the former techniques are as compared with the latter. Only ordinal judgments are possible. It is precisely in this sense, then, that ordinal numbers—ranking, preferring—must be regarded as more fundamental than cardinal ones and value be considered an irreducibly subjective, non-quantifiable magnitude.

Moreover, if it were indeed the function of money to serve as a measure of value, one must wonder why the demand for such a thing should ever systematically exceed one per person. The demand for rulers, scales, and clocks, for instance, exceeds one per person only because of differences in location (handiness) or the possibility of their breaking or failing. Apart from this, at any given point in time and space, no one would want to hold more than one measurement instrument of homogeneous quality, because a *single* measurement instrument can render *all* possible measurement services. A second instrument of its kind would be useless.

Third, in any case, whatever the *characteristicum specificum* of money may be, money is a *good*. Yet if it is a good, then it falls under the law of marginal utility, and this law *contradicts* any notion of a stable- or constant-valued good. The law follows from the proposition

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that every actor, at any given point in time, acts in accordance with his subjective preference scale and chooses to do what he expects—rightly or wrongly—to satisfy him more rather than less, and that in so doing he must invariably employ quantitatively definite—limited—units of qualitatively distinct goods as means and thus, by implication, must be capable of recognizing unit-additions and -subtractions to and from his supply of means. From this incontestably true proposition it follows (1), that an actor always prefers a larger supply of a good over a smaller one, i.e., he ranks the marginal utility of a larger sized unit of a good higher than that of a smaller sized unit of the same good; and (2), that any increment to the supply of a good by an additional unit—of any unit-size that an actor considers and distinguishes as relevant—will be ranked lower (valued less) than any same-sized unit of this good *already* in one's possession, as it can only be employed as a means for the removal of an uneasiness deemed less urgent than the least urgent one *up-to-now* satisfied by the same sized unit of this good, i.e., the marginal utility of a given-sized unit of a good decreases (increases) as the supply of such units increases (decreases). Each change in the supply of a good, then, leads to a change in this good's marginal utility. Any change in the supply of a good A, as perceived by an actor X, leads to X's *re*-evaluation of A. X attaches a *different* value-rank to A now. Hence, the search for a stable or constant-valued good is obviously illusory from the outset, on a par with wanting to square the circle, for every action involves exchange, and every exchange alters the supply of some good. It either results in a diminution of the supply of a good (as in pure consumption), or it leads to a diminution of one and an incrementation of another (as in production or interpersonal exchange). In either case, as supplies are changed in the course of any action, so are the values of the goods involved. To act is to purposefully *alter* the value of goods. Hence, a stable-valued good—money or anything else—must be considered a constructive or praxeological impossibility.

Finally, as regards the idea of a money—a dollar—of constant purchasing power, there is first the fundamental problem that the purchasing power of money *cannot be measured* and that the construction of price indices—any index—is scientifically arbitrary, i.e., as good or bad as any other. (What goods are to be included? What relative weight should be attached to each of them? What about the problem that individual actors value the same things differently and are concerned about different commodity baskets, or that the same individual evaluates the same basket differently at different times? What is one to do with changes in the quality of goods or with entirely

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new products?).[7] Moreover, what is so great about "stable" purchasing power anyway (however that term may be arbitrarily defined)? To be sure, it is obviously preferable to have a "stable" money rather than an "inflationary" one. Yet surely a money whose purchasing power per unit *increased*—"deflationary" money—would be preferable to a "stable" one.

What about the thesis that in the absence of any legal restrictions money—non-interest bearing cash—would be completely replaced by interest bearing securities?[8] Such displacement is conceivable only in equilibrium, where there is no uncertainty and hence no one could gain any satisfaction from being prepared for future contingencies as these are per assumption ruled out of existence. Under the omnipresent human condition of uncertainty, however, even if all legal restrictions on free entry were removed, a demand for non-interest bearing cash—as distinct from a demand for equity or debt claims (stocks, bonds or mutual fund shares)—would necessarily remain in effect. For whatever the specific nature of these claims may be, they represent titles to *producer* goods, otherwise they *cannot* yield interest. Yet even the most easily convertible production factor must be less saleable than the most saleable one of its final products, and hence, even the most liquid security can never perform the same service of preparing its owner for future contingencies as can be provided by the most marketable *final* non-interest bearing product: money. All of this could be different only if it were assumed—as Wallace in accordance with the Chicago school's egalitarian predispositions tacitly does—that all goods are equally marketable. Then, by definition there is no difference between the salability of cash and securities. However, then all goods must be assumed to be identical to each other, and if this were the case neither division of labor nor markets would exist.

From Commodity Money to Fiat Money: The Devolution of Money

If money must arise as a commodity money, how can it become fiat money? Via the development of money substitutes (paper titles to commodity money)—but only fraudulently and only at the price of economic inefficiencies.

[7]Mises, *Theory of Money and Credit*, pp. 187–94; idem, *Human Action*, pp. 219–23.

[8]See N. Wallace, "A Legal Restrictions Theory of the Demand for 'Money'," Federal Reserve Bank of Minneapolis *Quarterly Review* (1983); E. Fama, "Financial Intermediation and Price Level Control," *Journal of Monetary Economics* (1983); for a critique see Lawrence White, "Accounting for Non-Interest-Bearing Currency," *Journal of Money, Credit, and Banking* (1987).

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Under a commodity money standard such as the gold standard until 1914, money "circulated" on the one hand in the form of standardized bars of bullion and gold coins of various denominations trading against each other at essentially fixed ratios according to their weight and fineness. On the other hand, to economize on the cost of storing (safekeeping) and transacting (clearing) money, in a development similar to that of transferable property titles—including stock and bond certificates—as means of facilitating the spatial and temporal exchange of *non*-money goods, side by side with money proper also gold certificates—property titles (claims) to specified amounts of gold deposited at specified institutions (banks)—served as a medium of exchange. This coexistence of money proper (gold) and money substitutes (claims to money) affects neither the total supply of money—for any certificate put into circulation an equivalent amount of gold is taken out of circulation (deposited)—nor the interpersonal income and wealth distribution. Yet without a doubt the coexistence of money *and* money substitutes and the possibility of holding money in either form and in variable combinations of such forms constitutes an added convenience to individual market participants. This is how intrinsically worthless pieces of paper can acquire purchasing power. If and insofar as they represent an unconditional claim to money and if and insofar as no doubt exists that they are valid and may indeed be redeemed at any time, paper tickets are bought and sold *as if* they were genuine money—they are traded against money at par. Once they have thus acquired purchasing power and are *then* deprived of their character as claims to money (by somehow suspending redeemability), they may *continue* functioning as money. As Mises writes: "Before an economic good begins to function as money it must already possess exchange-value based on some other cause than its monetary function. But money that already functions as such may remain valuable even when the original source of its exchange-value has ceased to exist."[9]

However, would self-interested individuals *want* to deprive paper tickets of their character as titles to money? Would they *want* to suspend redeemability and adopt intrinsically worthless pieces of paper as money? Paper money champions like Milton Friedman claim this to be the case, and they typically cite a savings-motive as the reason for the substitution of fiat for commodity money: A gold standard involves social waste in requiring the mining and minting of gold. Considerable resources have to be devoted to the production

[9]Mises, *Theory of Money and Credit*, p. 111.

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of money.[10] With essentially costless paper money instead of gold, such waste would disappear, and resources would be freed up for the production of directly useful producer or consumer goods. It is thus a fiat money's higher economic efficiency which explains the present world's universal abandonment of commodity money! But is it so? Is the triumph of fiat money indeed the outcome of some innocuous saving? Is it even conceivable that it could be? Can self-interested individuals really *want* to save as fiat money champions assume that they do?

Somewhat closer scrutiny reveals that this is impossible, and that the institution of fiat money requires the assumption of a very different—not innocuous but sinister—motive: Assume a monetary economy with (at least) one bank and money proper ("outside money" in modern jargon) as well as money substitutes ("inside money") in circulation. If market participants indeed wanted to save on the resource costs of a commodity money (with the ultimate goal of demonetizing gold and monetizing paper), one would expect that first—as an approximation to this goal—they would want to give up using any outside money (gold). All transactions would have to be carried out with inside money (paper), and all outside money would have to be deposited in a bank and thus taken out of circulation entirely. (Otherwise, as long as genuine money was still in circulation, those individuals making use of gold coins would demonstrate unmistakably—through their very actions—that they did *not* want to save on the associated resource costs.)

But is it possible that money substitutes can thus outcompete—and displace—genuine money as a medium of exchange? No; even many hard money theoreticians have been too quick to admit such a possibility. The reason is that money substitutes are *substitutes* and have one permanent and decisive disadvantage as compared to money proper. Paper notes (claims to money) are redeemable at par only to the extent that a deposit fee has been paid to the depositing institution. Providing safeguarding and clearing services is a costly business, and a deposit fee is the price paid for guarded money. If paper notes are presented for redemption after the date up to which safeguarding fees were paid by the original or previous depositor, the depositing institution would have to impose a redemption charge and such notes would then trade at a discount against genuine money. The disadvantage of money substitutes is that they must be

[10]See Friedman, "Essays in Positive Economics, p. 210; idem, *A Program for Monetary Stability*, pp. 4–8; idem, *Capitalism and Freedom* (Chicago: University of Chicago Press, 1962), p. 40.

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continuously re-deposited and re-issued in order to maintain their character as money—their salability at par—and thus that they function as money only temporarily and discontinuously. Only money proper (gold coins) is permanently suited to perform the function as a medium of exchange. Accordingly, far from inside money ever displacing outside money, the use of money substitutes should be expected to be forever severely limited—restricted essentially to the transaction of very large sums of money and the dealings between regular commercial traders—while the overwhelming bulk of the population would employ money proper for most of their purchases or sales, thus demonstrating their preference for *not* wanting to save in the way fancied by Friedman.[11]

Moreover, even if one assumed for the sake of argument that only inside money is in circulation while all genuine money is stored in a bank, the difficulties for fiat money proponents do not end here. To be sure, in their view matters appear simple enough: All commodity money sits idle in the bank. Wouldn't it be more efficient if all of this idle gold were used instead for purposes of consumption or production—for dentistry or jewelry—while the function of a medium of exchange were assumed by a less expensive—indeed, practically costless—fiat money? Not at all.

First, the envisioned demonetization of gold certainly cannot mean that a bank thereby assumes ownership of the entire money stock, while the public gets to keep the notes. No one except the bankowner would agree to that! No one would want *such* savings. In fact, this would not be savings at all but an expropriation of the public by and to the sole advantage of the bank. No one could possibly *want* to be expropriated by somebody else. (Yet the expropriation of privately owned commodity money through governments and their central banks is the only method by which commodity money has ever

[11] Indeed, historically this has been the case: Traditionally, notes have always been widely distrusted, and their acceptability—as compared to that of genuine money such as gold or silver coins—was severely limited.

In order to increase the popularity of money substitutes two complementary measures were actually required: First, the note-issuing depositing institution had to overvalue deposit notes against genuine money by either charging no depositing fee or by even paying interest on deposits. Secondly, because the guarding of money is actually *not* costless and deposited money *cannot* possibly generate an interest return, the bank, in order to cover its otherwise unavoidable losses, had to engage in fractional reserve banking, i.e., it had to issue and bring into circulation new, additional deposit tickets that, while physically indistinguishable from any other notes, were actually not covered by genuine money.

On the ethical and economic status of the practice of fractional-reserve banking see the section, "From Deposit and Loan Banking to Fractional-Reserve Banking: The Devolution of Credit," below.

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been replaced by fiat money.) Instead, each depositor would want to retain ownership of his deposits and get his gold back.

Then, however, an insurmountable problem arises: Regardless who—the bank or the public—now owns the notes, they represent nothing but irredeemable paper. Formerly, the cost associated with the production of such paper was by no means only that of printing paper tickets, but more importantly that of attracting gold depositors through the provision of safeguarding and clearing services. Now, with irredeemable paper, there is nothing worth guarding anymore. The cost of money production falls close to zero, to mere printing costs. Previously, with paper representing claims to gold, the notes had acquired purchasing power. But how can the bank or the public sell them, i.e., get anyone to accept them, now? Would they be bought and sold for non-money goods at the formerly established exchange ratios? Obviously not. At least not as long as no legal barriers to entry into the note-production business existed; for under competitive conditions, of free entry, if the (non-money) price paid for paper notes exceeded their production costs, the production of notes would immediately be expanded to the point at which the price of money approached its cost of production. The result would be hyperinflation. No one would accept paper money anymore, and a flight into *real values* would set in. The monetary economy would break down completely and society would revert back to a primitive, highly inefficient barter economy. Out of barter then, once again a new (most likely a gold) commodity money would emerge (and the note producers once again, so as to gain acceptability for their notes, would begin backing them by this money). What a way of achieving savings!

If one is to succeed in replacing commodity money by fiat money, then, an additional requirement must be fulfilled: Free entry into the note-production business must be restricted, and a money *monopoly* must be established. A single paper money producer is also capable of causing hyperinflation and a monetary breakdown. However, insofar as he is legally shielded from competition, a monopolist can safely and knowingly restrict the production of his notes and thus assure that they retain their purchasing power. He then presumably would assume the task of *redeeming* old notes at par for new ones, as well as that of again providing safeguarding and clearing services in accepting note deposits in exchange for his issuance of substitutes of notes—demand deposit accounts and checkbook money—against a depositing fee.

Regarding this scenario, several related questions arise. Formerly, with commodity money every person was permitted to enter the gold mining and coining business freely—in accordance with the

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assumption of self-interested, wealth-maximizing actors. In contrast, in order for Friedman's "fiat money dividend" to come into existence, competition in the field of money production would have to be outlawed and a monopoly erected. Yet how can the existence of a legal monopoly be reconciled with the assumption of self-interest? Is it conceivable that self-interested actors could agree on establishing a fiat money monopoly in the same way as they can naturally agree on participating in the division of labor and on using one and the same commodity as a medium of exchange? If not, does this not demonstrate that the cost associated with such a monopoly must be considered higher than all attending resource cost savings?

To raise these questions is to answer them. Monopoly and the pursuit of self-interest are incompatible. To be sure, a motive why someone might want to become the money monopolist exists. After all, by not having to store, guard and redeem a precious commodity, the production costs are dramatically reduced and the monopolist could thus reap an extra profit; by being legally protected from all future competition, this monopoly profit would immediately become "capitalized," i.e., reflected permanently in an upward valuation of his assets, and on top of his inflated asset values he then would be guaranteed a normal rate of (interest) return. Yet to say that such an arrangement would be advantageous to the monopolist is not to say that it would be advantageous to anybody else, and hence that it could arise naturally. In fact, there is no motive for anyone wanting *anyone but himself* to be this monopolist, and accordingly no agreement on the selection of any particular monopolist would be possible. The position of a monopolist can only be arrogated—enforced against the will of all excluded non-monopolists. By definition, a monopoly creates a distinction between two classes of individuals of different legal quality: between those—privileged—individuals who are permitted to produce money, and those—subordinate—ones who, to the exclusive advantage of the former, are prohibited from doing the same. Such an institution *cannot* be supported in the same voluntary way as the institutions of the division of labor and a commodity money. It is *not*, as they are, the "natural"result of mutually advantageous interactions, but that of an unilaterally advantageous act of expropriation (abrogation). Accordingly, instead of relying for its continued existence on voluntary support and cooperation, a monopoly requires the threat of physical violence.[12]

[12]It might be argued that a monopoly agreement would be possible (conceivable), if the monopolistic bank of issue were owned by—and its profits distributed to—everyone. Wouldn't everyone, then, not just the monopolist, profit from the savings of substituting paper for gold?

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Moreover, the incompatibility of self-interest and monopoly does not end once the monopoly has been established but continues as long as the monopoly remains in operation. It cannot but operate inefficiently and at the expense of the excluded non-monopolists. First, under a regime of free competition (free entry), every single producer is under constant pressure to produce whatever he produces at minimum costs, for if he does *not* do so, he invites the risk of being outcompeted by new entrants who produce the product in question at lower costs. In contrast, a monopolist, shielded from competition, is under no such pressure. In fact, since the cost of money production includes the monopolist's own salary as well as all of his non-monetary rewards, a monopolist's "natural" interest is to *raise* his costs. Hence, it should be expected that the cost of a monopolistically provided paper money would very soon, if not from the very outset, *exceed* those associated with a competitively provided commodity money.

Furthermore, it can be predicted that the price of monopolistically provided paper money will steadily increase, i.e., the purchasing power per unit money, and hence its quality will continuously fall. Protected from new entrants, every monopolist is always tempted to raise price and lower quality. Yet this is particularly true of a money monopolist. While other monopolists must consider the possibility that price increases (or quality decreases) due to an elastic demand for their product may actually lead to reduced revenues, a

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In fact, such an agreement is illusionary. Joint ownership of the monopoly bank would imply that tradeable stock certificates must be issued and distributed. But who should get how much stock? Bank clients, according to their deposit size? Yet all private holders of notes help save on gold and would want to be included among the bank owners according to the size of their note holdings. And what about the owners and sellers of non-money goods? In showing themselves willing to accept paper instead of gold, they, too, play their part in the resource cost savings. But how in the world is one to determine how many shares to award *them*, when their contribution consists, as it does, of various quantities of heterogeneous consumer and producer goods? Here, at the very latest, it would become impossible to reach agreement.

Moreover, why would any new market participant—any later deposit, note and/or non-money good owner *not* initially endowed with bank stock—want to consent to and support this arrangement? Why should he *pay* for banking stock, while it was distributed to the initial wealth owners free of charge, even though he is now involved in resource cost savings just as much as they were then? Such an arrangement would involve a systematic redistribution of income and wealth in favor of all initial wealth owners and at the expense of all later ones. Yet if new, additional bank stock were issued for each new deposit, note or non-money good owner, such stock would be worthless from the outset and any bank offering it would be a non-starter.

In addition, as will be explained below, regardless of how the ownership problem is resolved, the very operation of the bank will—indeed *must*—have effects on—is not neutral to—the interpersonal income and wealth distribution.

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money monopolist can rest assured that the demand for his particular product—the common medium of exchange—will be highly inelastic. Indeed, short of a hyperinflation, when the demand for money disappears entirely, a money monopolist is practically always in a position in which he may assume that his revenue from the sale of money will increase even as he raises the price of money (reduces its purchasing power). Equipped with the exclusive right to produce money and under the assumption of self-interest, the monopoly bank should be expected to engage in a steady increase of the money supply, for while an increased supply of paper money does not add anything to social wealth—the amount of directly useful consumer and producer goods in existence—but merely causes inflation (lowers the purchasing power of money), with each additional note brought into circulation the monopolist can increase *his* real income (at the expense of lowering that of the non-monopolistic public). He can print notes at practically zero cost and then turn around and purchase *real* assets (consumer or producer goods) or use them for the repayment of *real* debts. The real wealth of the non-bank public will be reduced—they own less goods and more money of lower purchasing power. However, the monopolist's real wealth will increase—he owns more non-money goods (and he always has as much money as he wants). Who, in this situation, except angels, would *not* engage in a steady expansion of the money supply and hence in a continuous depreciation of the currency?

It may be instructive to contrast the theory of fiat money as outlined above to the views of Milton Friedman, as the outstanding modern champion of fiat money.

While the younger Friedman paid no systematic attention to the question of the origin of money, the older Friedman recognizes that, as a matter of historical fact, all monies originated as commodity monies (and all money substitutes as warehouse claims to commodity money), and he is—justly—skeptical of the older Friedrich A. Hayek's proposal of competitively issued fiat currencies.[13] However, misled by his positivist methodology, Friedman fails to grasp that money (and money substitutes) *cannot* originate in any other way, and accordingly, that Hayek's proposal *must* fail.

In contrast to the views developed here, throughout his entire work Friedman maintains that a commodity money in turn would be "naturally" replaced by a—more efficient, resource cost saving—fiat

[13]See Milton Friedman and Anna Schwartz, "Has Government Any Role in Money?" *Journal of Monetary Economics* (1986); for Hayek's proposal see his *Denationalization of Money* (London: Institute of Economic Affairs, 1976).

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money regime. Amazingly, however, he offers no argumentative support for this thesis, evades all theoretical problems, and whatever argument or empirical observation he does offer *contradicts* his very claim. There is, first off, no indication that Friedman is aware of the fundamental limitations of replacing outside money by inside money. Yet if outside money cannot disappear from circulation, how, except through an act of expropriation, can the link between paper and a money commodity be severed? The continued use of outside money in circulation demonstrates that it is *not* regarded as an inferior money; and the fact that expropriation is needed for the decommoditization of money would demonstrate that fiat money is *not* a natural phenomenon!

Interestingly, after evading the problem of explaining how the suspension of redeemability can possibly be considered natural or efficient, Friedman explicitly recognizes—quite correctly—that fiat money cannot, for the reasons given above, be provided competitively but requires a monopoly. From there he proceeds to assert that "the production of fiat currency is, as it were, a natural monopoly."[14] However, from the fact that fiat money requires a monopoly, it does not follow that there is anything "natural" about such a monopoly, and Friedman provides no argument whatsoever as to how any monopoly can possibly be considered the natural outcome of the interactions of self-interested individuals. Moreover, the younger Friedman in particular appears to be almost completely ignorant of classical political economy and its anti-monopolistic arguments: the axiom that if you give someone a privilege he will make use of it, and hence the conclusion that every monopolistic producer will be inefficient (in terms of costs as well as of price and quality). In light of these arguments it has to be regarded as breathtakingly naive on Friedman's part first to advocate the establishment of a governmental money monopoly, and then to expect this monopolist *not* to use its power, but to operate at the lowest possible costs and to inflate the money supply only gently (at a rate of 3–5% per year). This would assume that, along with becoming a monopolist, a fundamental transformation in the self-interested nature of mankind would take place.

It is not surprising that the older Friedman, having had extensive experience with his own ideal of a world of pure fiat currencies as it came into existence after 1971, and looking back on his own central—resource cost savings—argument for a monopolistically provided fiat

[14]See Friedman, *Essays in Positive Economics*, p. 216; also Friedman and Schwartz, "Has Government Any Role in Money?"

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money of nearly four decades earlier, cannot but acknowledge that his predictions turned out patently false.[15] Since abolishing the last remnants of the gold commodity money standard, he realizes, inflationary tendencies have dramatically increased on a world-wide scale; the predictability of future price movements has sharply decreased; the market for long-term bonds (such as consols) has been largely wiped out; the number of investment and "hard money" advisors and the resources bound up in such businesses have drastically increased; money market funds and currency futures markets have developed and absorbed significant amounts of real resources which otherwise—without the increased inflation and unpredictability—would not have come into existence at all or at least would never have assumed the same importance that they now have; and finally, it appears that even the direct resource costs devoted to the production of gold accumulated in private hoards as a hedge against inflation have increased.[16] But what conclusion does Friedman draw from this empirical evidence? In accordance with his own positivist methodology according to which science is prediction and false predictions falsify one's theory, one should expect that Friedman would finally discard his theory as hopelessly wrong and advocate a return to commodity money. Not so. Rather, in a remarkable display of continued ignorance (or arrogance), he emphatically concludes that none of this evidence should be interpreted as "a plea for a return to a gold standard. . . . On the contrary, I regard a return to a gold standard as neither desirable nor feasible."[17] Now as then he holds onto the view that the appeal of the gold standard is merely "nonrational, emotional," and that only a fiat money is "technically efficient."[18] According to Friedman, what needs to be done to overcome the obvious shortcomings of the current fiat money regime is find "some anchor to provide long-term price predictability, some substitute for convertibility into a commodity, or, alternatively, some device that would make predictability unnecessary. Many possible anchors and devices have been suggested, from monetary growth rules to tabular standards to the separation of the medium of exchange from

[15]See Milton Friedman, "The Resource Cost of Irredeemable Paper Money," *Journal of Political Economy* (1986).

[16]Monetarists had predicted that, as the result of the demonetization of gold and the transition to a pure fiat money system, the price of gold would *fall*—from the then official rate of $35 per ounce to an estimated non-monetary value of gold of around $6. In fact, the price of gold *rose*. At one point it reached $850 per ounce, and for most of the time it has lingered between $300 and $400. As of this writing the price is $375.

[17]Friedman, "The Resource Cost of Irredeemable Paper Money," p. 646.

[18]Friedman, *Essays in Positive Economics*, p. 250.

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the unit of account. As yet, no consensus has been reached among them."[19]

From Deposit and Loan Banking to Fractional-Reserve Banking: The Devolution of Credit

Banks perform two strictly separate tasks, only one of which has been considered so far.[20] On the one hand, they serve as depositing institutions, offering safekeeping and clearing services. They accept deposits of (commodity) money and issue claims to money (warehouse receipts; money substitutes) to their depositors, redeemable at par and on demand. For every claim to money issued by them they hold an equivalent amount of genuine money on hand, ready for redemption (100 percent reserve banking). No interest is paid on deposits. Rather, depositors pay a fee to the bank for providing safekeeping and

[19]Friedman, "The Resource Cost of Irredeemable Paper Money," p. 646; also idem, *Money Mischief: Episodes in Monetary History* (New York: Harcourt Brace Jovanovich, 1992), chap. 10.

Among the suggestions for an alternative fiat money "anchor" recently considered by Friedman, the "frozen monetary base rule" deserves a brief comment (see Friedman, "Monetary Policy for the 1980s," in *To Promote Prosperity*, J. H. Moore, ed. [Stanford: Hoover Institution, 1984]). In one respect this rule represents an advance over his earlier 3 to 5 percent monetary growth rule. His advocacy of the latter rule was based essentially on the erroneous—proto-Keynesian—notion that money constitutes part of social capital, such that an economy cannot grow by 3 to 5 percent unless it is accommodated to do so by a proportional increase in the money supply. In contrast, the frozen monetary base rule indicates a recognition of the old—Humean—insight that any supply of money is equally optimal or, in Friedman's own words, that money's "usefulness to the community as a whole does not depend on how much money there is" [Friedman, *Money Mischief*, p. 28). Yet otherwise the proposal represents no advance at all. For how in the world can a monopolist be expected to follow a frozen monetary base rule any more than a less stringent 3 to 5 percent growth rule?

Moreover, even if this problem were solved miraculously, this would still not alter the monopoly's character as an instrument of unilateral expropriation and income and wealth redistribution. For the monopolist, apart from offering depositing and clearing services (for which his customers would pay him a fee), would also have to perform the function, to customers and non-customers alike, of replacing old, worn-out notes—one-to-one and free of charge—with new, identical ones (otherwise, who would want to replace a permanent commodity money by a perishable fiat money?). Yet while the costs associated with this task may be low, they are definitely not zero. Accordingly, in order to avoid losses and recoup his expenses, the monopolist cannot but *increase* the monetary base—and hence one would essentially be back at the older monetary growth rule.

[20]On the following see in particular Murray N. Rothbard, *The Mystery of Banking* (New York: Richardson and Synder, 1983); idem, *The Case for A 100 Percent Gold Dollar* (Auburn, Ala.: Ludwig von Mises Institute, 1991); Mises, *Theory of Money and Credit;* idem, *Human Action*; also Walter Block, "Fractional Reserve Banking: An Interdisciplinary Perspective," in *Man, Economy, and Liberty: Essays in Honor of Murray N. Rothbard*, Walter Block and Llewellyn H. Rockwell, Jr., eds. (Auburn, Ala.: Ludwig von Mises Institute, 1988); J. Koch, *Fractional Reserve Banking: A Practical Critique* (Master's thesis, University of Nevada, Las Vegas, 1992).

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clearing services. Under conditions of free competition—free entry into the banking industry—the deposit fee, which constitutes a bank's revenue and possible source of profit, tends to be a minimum fee; and the profits—or rather. The interest returns—earned in banking tend to be the same as in any other, non-banking industry.

On the other hand, originally entirely separate institutionally from deposit institutions, banks also serve as intermediaries between savers and investors—as loan banks. In this function they first offer and enter into time-contracts with savers. Savers loan money to the bank for a specified—shorter or longer—period of time in exchange for the banks' contractual obligation of future repayment plus some additional interest return. From the point of view of savers, they exchange present money for a promise of future money: the interest return constituting their reward for performing the function of waiting. Having thus acquired temporary ownership of savings from savers, the bank then reloans the same money to investors (including itself) in exchange for the latters' obligation of future repayment and interest. The interest differential—the difference between the interest paid to savers and that charged to borrowers—represents the price for intermediating between savers and investors and constitutes the loan bank's income. As for deposit banking and deposit fees, under competitive conditions the costs of intermediation also tend to be minimum costs, and the profits from loan banking likewise tend to be the same as those that can be earned elsewhere.

Neither deposit banking nor loan banking as characterized here involve an increase in the money supply or a unilateral income or wealth redistribution. For every newly issued deposit note an equivalent amount of money is taken out of circulation (only the *form* of money changes, not its quantity), and in the course of loan banking the same sum of money simply changes hands repeatedly. All exchanges—between depositors and depositing institution as well as between savers, the intermediating bank and investors—are mutually advantageous.

In contrast, fractional reserve banking involves a deliberate confusion between the deposit and the loan function. It implies an increase in the money supply, and it leads to a unilateral income redistribution in the bank's favor as well as to economic inefficiencies in the form of boom-bust business cycles.

The confusion of both banking functions comes to light in the fact that under fractional reserve banking, either depositors are being paid interest (rather than having to pay a fee), and/or savers are granted the right of instant withdrawal (rather than having to wait

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with their request for redemption until a specified future date). Technically, the possibility of a bank's engaging in such practices arises out of the fact that the holders of demand deposits (claims to money redeemable on demand, instantly, at par) typically do *not* exercise their right simultaneously, such that all of them approach the bank with the request for redemption at the same time. Accordingly, a deposit bank will typically hold an amount of reserves (of money proper) in excess of actual daily withdrawals. It becomes thus feasible for the bank to loan these "excess" reserves to borrowers, thus earning the bank an interest return (which the bank then may partially pass on to its depositors in the form of interest paying deposit accounts).

Proponents of fractional reserve banking usually claim that this practice of holding less than 100 percent reserves represents merely an innocuous money "economizing," and they are fond of pointing out that not only the bank, but depositors (receiving interest) and savers (receiving instant withdrawal rights) profit from the practice as well. In fact, fractional reserve banking suffers from two interrelated fatal flaws and is anything but innocuous and all-around beneficial. First off, it should be noted that anything less than 100 percent reserve deposit banking involves what one might call a legal impossibility. For in employing its excess reserves for the granting of credit, the bank actually transfers temporary ownership of them to some borrower, while the depositors, entitled as they are to instant redemption, retain their ownership over the same funds. But it is impossible that for some time depositor *and* borrower are entitled to exclusive control over the same resources. Two individuals *cannot* be the exclusive owner of one and the same thing at the same time. Accordingly, any bank pretending otherwise—in assuming demand liabilities in excess of actual reserves—must be considered as acting fraudulently. Its contractual obligations *cannot* be fulfilled. From the outset, the bank must be regarded as inherently bankrupt—as revealed by the fact that it could not, contrary to its own presumption, withstand a possible bank run.

Second, in lending its excess reserves to borrowers, the bank increases the money supply, regardless whether the borrowers receive these reserves in the form of money proper or in that of demand deposits (checking accounts). If the loan takes the form of genuine money, then the amount of money proper in circulation is increased without withdrawing an equivalent amount of money substitutes from circulation; and if it takes the form of a checking account, then the amount of money substitutes is increased without taking a corresponding amount of genuine money out of circulation. In either

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case, there will be more money in existence now than before, leading to a reduction in the purchasing power of money (inflation) and, in its course, to a systematic redistribution of real income in favor of the bank and its borrower clients and at the expense of the non-bank public and all other bank clients. The bank receives additional interest income while it makes no additional contribution whatsoever to the real wealth of the non-bank public (as would be the case if the interest return were the result of reduced bank spending, i.e., savings); and the borrowers acquire real, non-monetary assets with their funds, thereby reducing the real wealth of the rest of the public by the same amount.

Moreover, insofar as the bank does not simply spend the excess reserves on its own consumption but instead loans them out against interest charges, invariably a business cycle is set in motion.[21] The quantity of credit offered is larger than before. As a consequence, the price of credit—the interest charged for loans—will fall below what it otherwise would have been. At a lower price, more credit is taken. Since money cannot breed more money, the borrowers, in order to be able to earn an interest return—and a pure profit on top of it—will have to convert their borrowed funds into investments, i.e., they will have to purchase or rent factors of production—land, labor, and possibly capital goods (produced factors of production)—capable of producing a future output of goods whose value (price) exceeds that of the input. Accordingly, with an expanded volume of credit, more presently available resources will be bound up in the production of *future* goods (instead of being used for present consumption) than otherwise would have been; and in order to complete all investment projects now under way, more time will be needed than that required to complete only those that would have been begun without the credit expansion. All the future goods which would have been created without the expansion plus those that are newly added on account of the credit expansion must be produced.

However, in distinct contrast to the situation where the interest rate falls due to a fall in the rate of time preference, i.e., the degree to which present goods are preferred over future goods, and hence where the public has in fact saved more so as to make a larger fund of present goods available to investors in exchange for their promise of a return of future goods, no such change in time preference and

[21]On the theory of the business cycle see in particular Ludwig von Mises, *Geldwertstabilisierung und Konjunkturpolitik* (Jena: Gustav Fischer, 1928); idem, *Human Action*, chap. 20; F. A. Hayek, *Prices and Production* (London: Routledge & Kegan Paul, 1931); Murray N. Rothbard, *America's Great Depression* (Kansas City: Sheed & Ward, 1975).

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savings has taken place in the case under consideration. The public has *not* saved more, and accordingly, the additional amount of credit granted by the bank does not represent *commodity credit* (credit covered by non-money goods which the public has abstained from consuming), but it is *fiduciary* or *circulation credit* (credit that has been literally created out of thin air—without any corresponding sacrifice, in the form of non-consumed non-money goods, on the part of the creditor).[22] Had the additional credit been commodity credit, an expanded volume of investment activities would have been warranted. There would have been a sufficiently large supply of present goods that could be devoted to the production of future goods such that all—the old as well as the newly begun—investment projects could be successfully completed and a higher level of future consumption attained. If the credit expansion is due to the granting of circulation credit, however, the ensuing volume of investment must actually prove over-ambitious. Misled by a lower interest rate, investors act *as if* savings had increased. They withdraw more of the presently available resources for investment projects, to be converted into future capital goods, than is warranted in light of actual savings. Consequently, capital goods prices will increase initially relative to consumer goods prices, but once the public's underlying time preference rate begins to reassert itself, a systematic shortage of consumer goods will arise. Accordingly, the interest rate will adjust upward, and it is now consumer goods prices which rise relative to capital goods prices, requiring the liquidation of part of the investment as unsustainable malinvestment. The earlier boom will turn bust, reducing the future standard of living below the level that otherwise could have been reached.

Among recent proponents of fractional reserve banking the cases of Lawrence White and George Selgin[23] deserve a few critical comments, if for no other reason than that both are critics of Friedmanite monetarism and they hark back, instead, to the tradition of Austrian and in particular Misesian monetary theory.[24] Their monetary ideal is a universal commodity money such as an international gold

[22]On the fundamental distinction between commodity credit and circulation credit, see Mises, *Theory of Money and Credit*, pp. 263 ff.

[23]See Lawrence White, *Competition and Currency* (New York: New York University Press, 1989); George Selgin, *The Theory of Free Banking* (Totowa, N.J.: Rowman & Littlefield, 1988).

[24]For a critique of White and Selgin as misinterpreting the fundamental thrust of Mises's theory of money and banking see Joseph Salerno, "The Concept of Coordination in Austrian Macroeconomics," in *Austrian Economics: Perspectives on the Past and Prospects for the Future*, Richard Ebeling, ed. (Hillsdale, Mich.: Hillsdale College Press, 1991); idem, "Mises and Hayek Dehomogenized," *Review of Austrian Economics* 6, no. 2 (1993): 113–46.

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standard and, based on this, a system of competitive banking which, they claim, would—and should be permitted to do so for reasons of economic efficiency as well as justice—engage in fractional reserve banking and the granting of fiduciary credit.

As to the question of justice, White and Selgin offer but one argument destined to show the allegedly non-fraudulent character of fractional reserves: that outlawing such a practice would involve a violation of the principle of freedom of contract by preventing "banks and their customers from making whatever sorts of contractual arrangements are mutually agreeable."[25] Yet this is surely a silly argument. First off, as a matter of historical fact fractional reserve banks never informed their depositors that some or all of their deposits would actually be loaned out and hence could not possibly be ready for redemption at any time. (Even if the bank were to pay interest on deposit accounts, and hence it *should* have been clear that the bank *must* loan out deposits, this does not imply that any of the depositors actually understand this fact. Indeed, it is safe to say that few if any do, even among those who are not economic illiterates.) Nor did fractional reserve banks inform their borrowers that some or all of the credit granted to them had been created out of thin air and was subject to being recalled at any time. How, then, can their practice be called anything but fraud and embezzlement!

Second, and more decisive, to believe that fractional reserve banking should be regarded as falling under and protected by the principle of freedom of contract involves a complete misunderstanding of the very meaning of this principle. Freedom of contract does not imply that *every* mutually advantageous contract should be permitted. Clearly, if A and B contractually agree to rob C, this would *not* be in accordance with the principle. Freedom of contract means instead that A and B should be allowed to make any contract whatsoever *regarding their own properties*, yet fractional reserve banking involves the making of contracts regarding the property of third parties. Whenever the bank loans its "excess" reserves to a borrower, such a bilateral contract affects the property of third parties in a threefold way. First, by thereby increasing the money supply, the purchasing power of all other money owners is reduced; second, all depositors are harmed because the likelihood of their successfully recovering their own possessions is lowered; and third, all other borrowers—borrowers of commodity credit—are harmed because the

[25]White, *Competition and Currency*, p. 156, also pp. 55–56; George Selgin, "Short-Changed in Chile: The Truth about the Free-Banking Episode," *Austrian Economics Newsletter* (Winter/Spring, 1990): 5.

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injection of fiduciary credit impairs the safety of the entire credit structure and increases the risk of a business failure for every investor of commodity credit.

In order to overcome these objections to the claim that fractional reserve banking accords with the principle of freedom of contract, White and Selgin then, as their last line of defense, withdraw to the position that banks may attach an "option clause" to their notes, informing depositors that the bank may at any time suspend or defer redemption, and letting borrowers know that their loans may be instantly recalled.[26] While such a practice would indeed dispose of the charge of fraud, it is subject to another fundamental criticism, for such notes would no longer be *money* but a peculiar form of *lottery tickets*.[27] It is the function of money to serve as the most easily resalable and most widely acceptable good, so as to prepare its owner for instant purchases of directly or indirectly serviceable consumer or producer goods at not yet known future dates; hence, whatever may serve as money, so as to be instantly resalable at any future point in time, it must be something that bestows an *absolute* and *un*conditional property right on its owner. In sharp contrast, the owner of a note to which an option clause is attached does *not* possess an unconditional property title. Rather, similar to the holder of a "fractional reserve parking ticket" (where more tickets are sold than there are parking places on hand, and lots are allocated according to a "first-come-first-served" rule), he is merely entitled to participate in the drawing of certain prizes, consisting of ownership- or time-rental services to specified goods according to specified rules. But as drawing rights—instead of unconditional ownership titles—they only possess *temporally conditional* value, i.e., *until* the drawings, and become worthless as soon as the prizes have been allocated to the ticket holders; thus, they would be uniquely *un*suited to serve as a medium of exchange.

As regards the second contention: that fractional reserve banking is economically efficient, it is noteworthy to point out that White, although he is undoubtably familiar with the Austrian-Misesian claim that *any* injection of fiduciary credit must result in a boom-bust cycle, nowhere even mentions the problem of business cycles. Only Selgin addresses the problem. In his attempt to show that fractional reserve banking does *not* cause business cycles, however, Selgin then falls headlong into the fundamental Keynesian error of confusing the

[26]White, *Currency and Competition*, p. 157; Selgin, *The Theory of Free Banking*, p. 137.

[27]See Block, "Fractional Reserve Banking: An Interdisciplinary Perspective," p. 30.

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demand for money (determined by the utility of money) and savings (determined by time preference).[28]

According to Selgin, "to hold inside money is to engage in voluntary saving"; and accordingly, "an increase in the demand for money warrants an increase in bank loans and investments." For, "whenever a bank expands its liabilities in the process of making new loans and investments, it is the holders of the liabilities who are the ultimate lenders of credit, and what they lend are the real resources they could acquire if, instead of holding money, they spent it."[29] And based on this view of the holding of money as representing saving and an increased demand for money as being the same thing as increased saving, then, Selgin goes on to criticize Mises's claim that *any* issuance of fiduciary media, in lowering the interest rate below its "natural" level, must cause a business cycle as "confused." "No ill consequences result from the issue of fiduciary media in response to a greater demand for balances of inside money."[30]

Yet the confusion is all Selgin's. First off, it is plainly false to say that the holding of money, i.e., the act of not spending it, is equivalent to saving. One might as well say—and this would be equally wrong—that the not-spending of money is equivalent to *not* saving. In fact, saving is not-consuming, and the demand for money has nothing to do with saving *or* not-saving. The demand for money is the unwillingness to buy or rent non-money goods—and these include consumer goods (present goods) *and* capital goods (future goods). Not-spending money is to purchase *neither* consumer goods *nor* investment goods. Contrary to Selgin, then, matters are as follows: Individuals may employ their monetary assets in one of three ways. They can spend them on consumer goods; they can spend them on investment; or they can keep them in the form of cash. There are no other alternatives. While a person must at all times make decisions regarding three margins at once, invariably the outcome is determined by two distinct and praxeologically unrelated factors. The consumption/investment proportion, i.e., the decision of how much of one's money to spend on consumption and how much on investment, is determined by a person's time preference, i.e., the degree to which he prefers present consumption over future consumption. On the other hand, the source of his demand for cash is the utility attached to money, i.e., the

[28]For a critique of this error see Rothbard, *America's Great Depression*, pp. 39–43; Hans-Hermann Hoppe, "Theory of Employment, Money, Interest, and the Capitalist Process: The Misesian Case Against Keynes," in *The Economics and Ethics of Private Property*, Hoppe, ed. (Boston: Kluwer, 1993), pp. 119–20, 137–38.

[29]Selgin, *The Theory of Free Banking*, p. 54–55.

[30]Ibid., pp. 61–62.

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personal satisfaction derived from money in allowing him immediate purchases of directly or indirectly serviceable consumer or producer goods at uncertain future dates.

Accordingly, if the demand for money increases while the social stock of money is given, this additional demand can only be satisfied by bidding down the money prices of non-money goods. The purchasing power of money will increase, the *real* value of individual cash balances will be raised, and at a higher purchasing power per unit money, the demand for and the supply of money will once again be equilibrated. The relative price of money versus non-money will have changed. But *unless* time preference is assumed to have changed at the same time, *real* consumption and *real* investment will remain the same as before: the additional money demand is satisfied by reducing nominal consumption *and* investment spending in accordance with the same pre-existing consumption/investment proportion, driving the money prices of both consumer as well as producer goods down and leaving real consumption and investment at precisely their old levels. If time preference is assumed to change concomitantly with an increased demand for money, however, then everything is possible. Indeed, if spending were reduced exclusively on investment goods, an increased demand for money could even go hand in hand with an increase in the rate of interest and reduced saving and investment. Yet this, or the equally possible opposite outcome, would not be due to a change in the demand for money but exclusively to a change (a rise, or a fall) in the time preference schedule. In any case, if the banking system were to follow Selgin's advice and *accommodate* an increased demand for cash by issuing fiduciary credit, the social rate of time preference would be falsified, excessive investment would result, and a boom-bust cycle would be set in motion, rendering the practice of fractional reserve banking fraudulent *as well as* economically inefficient.

White's and Selgin's proposal of a commodity money based system of competitive fractional reserve banking—of partial fiat money—is neither just (and hence the term "free banking" is inappropriate), nor does it produce economic stability. It is no fundamental improvement as compared to the monetarist reality of monopolistically issued pure fiat currencies. Indeed, in one respect Friedman's pure fiat money proposal contains a more realistic and correct analysis than White's and Selgin's because Friedman recognizes "what used to be called 'the inherent instability' of fractional reserve banking," and he understands that this inherent instability of competitive fractional reserve banking will sooner or later collapse in a "liquidity crisis" and

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then lead to his favored regime—a governmentally provided pure fiat currency—anyway.[31]

Only a system of universal commodity money (gold), competitive banks, *and* 100 percent reserve deposit banking with a strict functional separation of loan and deposit banking is in accordance with justice, can assure economic stability and represents a genuine answer to the current monetarist fiasco.

[31]See Friedman and Schwartz, "Has Government Any Role in Money?"

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The Consumption Tax: A Critique

Murray N. Rothbard

The Alleged Superiority of the Income Tax

Orthodox neoclassical economics has long maintained that, from the point of view of the taxed themselves, an income tax is "better than" an excise tax on a particular form of consumption, since, in addition to the total revenue extracted, which is assumed to be the same in both cases, the excise tax weights the levy heavily against a particular consumer good. In addition to the total amount levied, therefore, an excise tax skews and distorts spending and resources away from the consumers' preferred consumption patterns. Indifference curves are trotted out with a flourish to lend the scientific patina of geometry to this demonstration.

As in many other cases when economists rush to judge various courses of action as "good," "superior" or "optimal," however, the *ceteris paribus* assumptions underlying such judgments—in this case, for example, that total revenue remains the same—do not always hold up in real life. Thus, it is certainly possible, for political or other reasons, that one particular form of tax is *not likely* to result in the same total revenue as another. The nature of a particular tax might lead to less or more revenue than another tax. Suppose, for example, that all present taxes are abolished and that the same total is to be raised from a new capitation, or head, tax, which requires that every inhabitant of the United States pay an equal amount to the support of federal, state, and local government. This would mean that the existing total government revenue of the United States, which we estimate at 1 trillion, 380 million dollars—and here exact figures are not important—would have to be divided between an

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approximate total of 243 million people. Which would mean that every man, woman, and child in America would be required to pay to government each and every year, $5680. Somehow, I don't believe that anything like this large a sum could be collectible by the authorities, no matter how many enforcement powers are granted the IRS. A clear example where the *ceteris paribus* assumption flagrantly breaks down.

But a more important, if less dramatic, example is nearer at hand. Before World War II, Internal Revenue collected the full amount, in one lump sum, from every taxpayer, on March 15 of each year. (A month's extension was later granted to the long-suffering taxpayers.) During World War II, in order to permit an easier and far smoother collection of the far higher tax rates for financing the war effort, the federal government instituted a plan conceived by the ubiquitous Beardsley Ruml of R.H. Macy & Co., and technically implemented by a bright young economist at the Treasury Department, Milton Friedman. This plan, as all of us know only too well, coerced every employer into the unpaid labor of withholding the tax each month from the employee's paycheck and delivering it to the Treasury. As a result, there was no longer a need for the taxpayer to cough up the total amount in a lump sum each year. We were assured by one and all, at the time, that this new *withholding tax* was strictly limited to the wartime emergency, and would disappear at the arrival of peace. The rest, alas, is history. But the point is that no one can seriously maintain that an income tax deprived of withholding power, could be collected at its present high levels.

One reason, therefore, that an economist cannot claim that the income tax, or any other tax, is better from the point of view of the taxed person, is that total revenue collected is often a function of the type of tax imposed. And it would seem, that from the point of view of the taxed person, the less extracted from him the better. Even indifference curve analysis would have to confirm that conclusion. If someone wishes to claim that a taxed person is disappointed at how *little* tax he is asked to pay, that person is always free to make up the alleged deficiency by making a voluntary gift to the bewildered but happy taxing authorities.[1]

[1]In 1619, Father Pedro Fernandez Navarrete, "Canonist Chaplain and Secretary of his High Majesty," published a book of advice to the Spanish monarch. Sternly advising a drastic cut in taxation and government spending, Father Navarrete recommended that, in the case of sudden emergencies, the king rely soley on soliciting voluntary donations. Alejandro Antonio Chafuen, *Christians for Freedom: Late Scholastic Economics* (San Francisco: Ignatius Press, 1986), p. 68.

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A second insuperable problem with an economist's recommending any form of tax from the alleged point of view of the taxee, is that the taxpayer may well have particular subjective evaluations of the form of tax, apart from the total amount levied. Even if the total revenue extracted from him is the same for tax A and tax B, he may have very different subjective evaluations of the two taxing processes. Let us return, for example, to our case of the income as compared to an excise tax. Income taxes are collected in the course of a coercive and even brutal examination of virtually every aspect of every taxpayer's life by the all-seeing, all-powerful Internal Revenue Service. Each taxpayer, furthermore, is obliged by law to keep accurate records of his income and deductions, and then, painstakingly and truthfully, to fill out and submit the very forms that will tend to incriminate him into tax liability. An excise tax, say on whiskey or on movie admissions, will intrude directly on no one's life and income, but only into the sales of the movie theater or liquor store. I venture to judge that, in evaluating the "superiority" or "inferiority" of different modes of taxation, even the most determined imbiber or moviegoer would cheerfully pay far higher prices for whiskey or movies than neoclassical economists contemplate, in order to avoid the long arm of the IRS.[2]

The Forms of Consumption Tax

In recent years, the old idea of a consumption tax in contrast to an income tax has been put forward by many economists, particularly by allegedly pro-free market conservatives. Before turning to a critique of the consumption tax as a substitute for the income tax, it should be noted that current proposals for a consumption tax would deprive taxpayers of the psychic joy of eradicating the IRS. For while the discussion is often couched in either-or terms, the various proposals really amount to *adding* a new consumption tax on top of the current massive armamentarium of taxing power. In short, seeing that income tax levels may have reached their political limits for the time being, our tax consultants and theoreticians are suggesting a shining new tax weapon for the government to wield. Or, in the immortal words of that exemplary economic czar and servant of absolutism, Jean-Baptiste Colbert, the task of the taxing authorities is to "so pluck the goose as to obtain the largest amount of feathers

[2]It is particulary poignant, on or near any April 15, to contemplate the dictum of Father Navarrete, that "the only agreeable country is the one where no one is afraid of tax collectors," Chafuen, *Christians for Freedom*, p. 73. Also see Murray N. Rothbard, "Review of A. Chafuen, *Christians for Freedom: Late Scholastic Economics*," *International Philosophical Quarterly* 28 (March 1988): 112–14.

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with the least amount of hissing." We the taxpayers, of course, are the geese.

But let us put the best face on the consumption tax proposal, and deal with it as a complete replacement of the income tax by a consumption tax, with total revenue remaining the same. Our first point is that one venerable form of consumption tax not only retains existing IRS despotism, but makes it even worse. This is the consumption tax first prominently proposed by Irving Fisher.[3] The Fisher tax would retain the IRS, as well as the requirement that everyone keep detailed and faithful records and truthfully estimate his own taxes. But it would add something else. *In addition* to reporting one's income and deductions, everyone would be required to report his additions to or subtractions from capital assets (including cash) over the year. Then, everyone would pay the designated tax rate on his income minus his addition to capital assets, or net consumption. Or, contrarily, if he spent more than he earned over the year, he would pay a tax on his income plus his reduction of capital assets, again equalling his net consumption. Whatever the other merits or demerits of the Fisherine tax, it would *add* to IRS power over every individual, since the state of his capital assets, including his stock of cash, would now be examined with the same care as his income.

A second proposed consumption tax, the VAT, or value-added tax, imposes a curious hierarchical tax on the "value added" by each firm and business. Here, instead of every individual, every business firm would be subjected to intense bureaucratic scrutiny, for each firm would be obliged to report its income and its expenditures, paying a designated tax on the net income. This would tend to distort the structure of business. For one thing, there would be an incentive for uneconomic vertical integration, since the fewer the number of times a sale takes place, the fewer the imposed taxes. Also, as has been happening in European countries with experience of the VAT, a flourishing industry may arise in issuing phony vouchers, so that businesses can overinflate their alleged expenditures, and reduce their reported value added. Surely a sales tax, other things being equal, is manifestly both simpler, less distorting of resources, and enormously less bureaucratic and despotic than the VAT. Indeed the VAT seems to have no clear advantage over the sales tax, except of course, if multiplying bureaucracy and bureaucratic power is considered a *benefit*.

[3]See, for example, Irving and Herbert N. Fisher, *Constructive Income Taxation* (New York: Harper, 1942).

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The third type of consumption tax is the familiar percentage tax on retail sales. Of the various forms of consumption tax, the sales tax surely has the great advantage, for most of us, of eliminating the despotic power of the government over the life of every individual, as in the income tax, or over each business firm, as in the VAT. It would not distort the production structure as would the VAT, and it would not skew individual preferences as would specific excise taxes.

Let us now consider the merits or demerits of a consumption as against an income tax, setting aside the question of bureaucratic power. It should first be noted that the consumption tax and the income tax each carry distinct philosophical implications. The income tax rests necessarily on the ability-to-pay principle, namely the principle that if a goose has more feathers it is more ripe for the plucking. The ability-to-pay principle is precisely the creed of the highwayman, of taking where the taking is good, of extracting as much as the victims can bear. The ability-to-pay principle is the philosophical embodiment of the memorable answer of Willie Sutton when he was asked, perhaps by a psychological social worker, why he robbed banks. "Because," answered Willie, "that's where the money is."

The consumption tax, on the other hand, can only be regarded as a payment for permission-to-live. It implies that a man will not be allowed to advance or even sustain his own life, unless he pays, off the top, a fee to the State for permission to do so. The consumption tax does not strike me, in its philosophical implications, as one whit more noble, or less presumptuous, than the income tax.

Proportionality And Progressivity: Who? Whom?

One of the suggested virtues of the consumption tax advanced by conservatives is that, while the income tax can be and generally is progressive, the consumption tax is virtually automatically proportional. It is also claimed that progressive taxation is tantamount to theft, with the poor robbing the rich, whereas proportionality is the fair and ideal tax. In the first place, however, the Fisher-type consumption tax could well be every bit as progressive as the income tax. Even the sales tax is scarcely free from progressivity. For most sales taxes in practice exempt such products as food, exemptions that distort individual market preferences and also introduce progressivity of taxation.

But is progressivity really the problem? Let us take two individuals, one who makes $10,000 a year and another who makes $100,000. Let us posit two alternative tax systems: one proportional, the other

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steeply progressive. In the progressive tax system, income tax rates range from 1 percent for the $10,000 a year man, to 15 percent for the man with the higher income. In the succeeding proportional system, let us assume, everyone, regardless of income, pays the same 30 percent of his income. In the progressive system, the low-income man pays $100 a year in taxes, and the wealthier pays $15,000, whereas in the allegedly fairer proportional system, the poorer man pays $3000 instead of $100, while the wealthier pays $30,000 instead of $15,000. It is, however, small consolation to the higher-income person that the poorer man is paying the same percentage of income in tax as he, for the wealthier person is being mulcted far more than before. It is unconvincing, therefore, to the richer man to be told that he is now no longer being "robbed" by the poor, since he is losing far more than before. If it is objected that the *total level* of taxation is far higher under our posited proportional than progressive system, we reply that that is precisely the point. For what the higher income person is *really* objecting to is not the mythical robbery inflicted upon him by "the poor;" his problem is the very real amount being extracted from him by the *State*. The wealthier man's real complaint, then, is not how badly he is being treated relative to someone else, but how much money is being extracted from his own hard-earned assets. We submit that *progressivity* of taxes is a red herring; that the real problem and proper focus should be on the *amount* that any given individual is obliged to surrender to the State.[4]

The State, of course, spends the money it receives on various groups, and those who claim that progressive taxation mulcts the rich on behalf of the poor argue by comparing the income status of the taxpayers with those on the receiving end of the State's largess. Similarly, the Chicago school claims that the tax system is a process by which the middle class exploits both the rich and the poor, while the New Left insists that taxes are a process by which the rich exploit the poor. All of these attempts misfire by unjustifiably bracketing as one class the payers to, and recipients from, the State. Those who pay taxes to the State, be they wealthy, middle class or poor, are certainly on net, a *different set* of people than those wealthy, middle-class, or poor, who receive money from State coffers, which notably includes politicians and bureaucrats as well as those who receive favors from these members of the State apparatus. It makes no sense to lump these groups together. It makes far more sense to realize that the

[4]For a fuller treatment, and a discussion of who is being robbed by *whom*, see Murray N. Rothbard, *Power and Market: Government and the Economy*, 2nd ed. (Kansas City: Sheed Andrews & McMeel, 1977), pp. 120–21.

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process of tax-and-expenditures creates *two* and only two separate, distinct, antagonistic social classes, what Calhoun brilliantly identified as the (net) taxpayers and the (net) tax-consumers, those who pay taxes and those who live off them. I submit that, looked at in this perspective, it also becomes particularly important to minimize the burdens which the State and its privileged tax-consumers place on the productivity of the taxpayers.[5]

The Problem of Taxing Savings

The major argument for replacing an income by a consumption tax is that savings would no longer be taxed. A consumption tax, its advocates assert, would tax consumption and not savings. The fact that this argument is generally advanced by free-market economists, in our day mainly by the supply-siders, strikes one immediately as rather peculiar. For individuals on the free market, after all, each decide their own allocation of income to consumption or to savings. This proportion of consumption to savings, as Austrian economics teaches us, is determined by each individual's rate of time preference, the degree by which he prefers present to future goods. For each person is continually allocating his income between consumption now, as against saving to invest in goods that will bring an income in the future. And each person decides the allocation on the basis of his time preference. To say, therefore, that only consumption should be taxed and not savings, is to challenge the voluntary preferences and choices of individuals on the free market, and to say that they are saving far too little and consuming too much, and therefore that taxes on savings should be removed and all the burdens placed on present as compared to future consumption. But to do that is to challenge free-market expressions of time preference, and to advocate government coercion to forcibly alter the expression of those preferences, so as to coerce a higher saving to consumption ratio than desired by free individuals.

We must, then, ask: by what standards do the supply-siders and other advocates of consumption taxes decide why and to what extent savings are too low and consumption too high? What are their criteria of "too low" or "too much," on which they base their proposed coercion over individual choice? And what is more, by what right do they call themselves advocates of the "free-market" when they propose to dictate choices in such a vital realm as the proportion between present and future consumption?

[5]See Murray N. Rothbard, *Man, Economy, and State: A Treatise on Economic Principles*, 2nd ed. (Los Angeles: Nash, 1970), 2, pp. 791–92; idem, *Power and Market*, pp. 84–88, 14–16. Cf. John C. Calhoun, *A Disquisition on Government* (New York: Liberals Arts Press, 1953), pp. 16–18.

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Supply-siders consider themselves heirs of Adam Smith, and in one sense they are right. For Smith, too, driven in his case by a deep-seated Calvinist hostility to luxurious consumption, sought to use government to raise the social proportion of investment to consumption beyond the desires of the free market. One method he advocated was high taxes on luxurious consumption; another was usury laws, to drive interest rates below the free market level, and thereby coercively channel or ration savings and credit into the hands of sober, industrious prime business borrowers, and out of the hands of "projectors" and "prodigal" consumers who would be willing to pay high interest charges. Indeed, through the device of the ghostly Impartial Spectator, who, in contrast to real human beings, is indifferent to the time at which he will receive goods, Smith virtually held a zero rate of time preference to be the ideal.[6]

The only coherent argument offered by advocates of consumption against income taxation is that of Irving Fisher, based on suggestions in John Stuart Mill.[7] Fisher argued that, since the goal of all production is consumption, and since all capital goods are only way-stations on the way to consumption, the only *genuine* income is consumption spending. The conclusion is quickly drawn that therefore only consumption income, not what is generally called "income," should be subject to tax.

More specifically, savings and consumption, it is alleged, are not really symmetrical. All saving is directed toward enjoying more consumption in the future. Potential present consumption is foregone in return for an expected increase in future consumption. The argument concludes that therefore any return on investment can only be considered a "double-counting" of income, in the same way that a repeated counting of the gross sales of, say, a case of Wheaties from manufacturer to jobber to wholesaler to retailer as part of net income or product would be a multiple counting of the same good.

This reasoning is correct as far as it goes in explaining the consumption-savings process, and is quite helpful in leveling a critique of conventional national income or product statistics. For these statistics carefully leave out all double or multiple counting in order to arrive at total net product, yet they arbitrarily include in total net income, investment in all capital goods *lasting longer than one year*—a clear example itself of double counting. Thus, the current practice absurdly excludes from net income a merchant's investment

[6]See the illiminating article by Roger W. Garrision, "West's 'Cantillon and Adam Smith': A Comment," *Journal of Libertarian Studies* 7 (Fall 1985): 291–92.

[7]See Rothbard, *Power and Market*, pp. 98–100.

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in inventory lasting eleven months before sale, but *includes* in net income investment in inventory lasting for thirteen months. The cogent conclusion is that an estimate of social or national income should include only consumer spending.[8]

Despite the many virtues of the Fisher analysis, however, it is impermissible to leap to the conclusion that only consumption should be taxed rather than income. It is true that savings leads to a greater supply of consumer goods in the future. But this fact is known to all persons; that is precisely *why* people save. The market, in short, knows all about the productive power of savings for the future, and allocates its expenditures accordingly. Yet even though people know that savings will yield them more future consumption, why don't they save *all* their current income? Clearly, because of their time preferences for present as against future consumption. These time preferences govern people's allocation between present and future. Every individual, given his money "income"—defined in conventional terms—and his value scales, will allocate that income in the most desired proportion between consumption and investment. Any *other* allocation of such income, any different proportions, would therefore satisfy his wants and desires to a lesser extent and lower his position on his value scale. It is therefore incorrect to say that an income tax levies an extra burden on savings and investment; it penalizes an individual's *entire* standard of living, present and future. An income tax does not penalize saving *per se* any more than it penalizes consumption.

Hence, the Fisher analysis, for all its sophistication, simply shares the other consumption tax advocates' prejudices against the voluntary free-market allocations between consumption and investment. The argument places greater weight on savings and investment than the market does. A consumption tax is just as disruptive of voluntary time preferences and market allocations as is a tax on savings. In most or all other areas of the market, free market economists understand that allocations on the market tend always to be optimal with respect to satisfying consumers' desires. Why then do they all too often make an exception of consumption-savings allocations, refusing to respect time-preference rates on the market?

Perhaps the answer is that economists are subject to the same temptations as anyone else. One of these temptations is to call loudly

[8]We omit here the fascinating question of how *government's* activities should be treated in national income statistics. See Rothbard, *Man, Economy, and State*, 2, pp. 815–20; idem, *Power and Market*, pp. 199–201; idem, *America's Great Depression*, 4th ed. (New York: Richardson & Snyder, 1983), pp. 296–304; Robert Batemarco, "GNP, PPR, and the Standard of Living," *Review of Austrian Economics* 1 (1987): 181–86.

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for you, him, and the other guy to work harder, and save and invest more, thereby increasing one's own present and future standards of living. A follow-up temptation is to call for the gendarmes to enforce that desire. Whatever we may call this temptation, economic science has nothing to do with it.

The Impossibility of Taxing Only Consumption

Having challenged the merits of the goal of taxing only consumption and freeing savings from taxation, we now proceed to deny the very *possibility* of achieving that goal, i.e., we maintain that a consumption tax will devolve, willy-nilly, into a tax on income and therefore on savings as well. In short, that even if, for the sake of argument, we should *want* to tax only consumption and not income, we should not be able to do so.

Let us take, first, the Fisher plan, which, seemingly straightforward, would exempt saving and tax only consumption. Let us take Mr. Jones, who earns an annual income of $100,000. His time preferences lead him to spend 90 percent of his income on consumption, and save-and-invest the other 10 percent. On this assumption, he will spend $90,000 a year on consumption, and save-and-invest the other $10,000. Let us assume now that the government levies a 20 percent tax on Jones's income, and that his time-preference schedule remains the same. The ratio of his consumption to savings will still be 90:10, and so, after-tax income now being $80,000, his consumption spending will be $72,000 and his saving-investment $8,000 per year.[9]

Suppose now that instead of an income tax, the government follows the Irving Fisher scheme, and levies a 20 percent annual tax on Jones's *consumption*. Fisher maintained that such a tax would fall only on consumption, and not on Jones's savings. But this claim is incorrect, since Jones's entire savings-investment is based solely on the possibility of his *future* consumption, which will be taxed equally. Since future consumption will be taxed, we assume, at the same rate as consumption at present, we cannot conclude that savings in the long run receives any tax exemption or special encouragement. There will therefore be no shift by Jones in favor of savings-and-investment due to a consumption tax.[10] In sum, any payment of

[9]We set aside the fact that, at the lower amount of money assets left to him, Jones's time preference *rate*, given his time preference schedule, will be higher, so that his consumption will be higher, and his savings lower, than we have assumed.

[10]In fact, per note 9, *supra*, there will be a shift *in favor of* consumption because a diminished amount of money will shift the taxpayer's time preference rate in the direction of consumption. Hence, paradoxically, a pure tax on consumption will and up taxing savings *more* than consumption! See Rothbard, *Power and Market*, pp. 108–11.

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taxes to the government, whether they be consumption or income, necessarily reduces Jones's net income. Since his time preference schedule remains the same, Jones will therefore reduce his consumption *and* his savings proportionately. The consumption tax will be shifted by Jones until it becomes equivalent to a lower rate of tax on his own income. If Jones still spends 90 percent of his net income on consumption, and 10 percent on savings-investment, his net income will be reduced by $15,000, instead of $20,000, and his consumption will now total $76,000, and his savings-investment $9,000. In other words, Jones's 20 percent consumption tax will become equivalent to a 15 percent tax on his income, and he will arrange his consumption-savings proportions accordingly.[11]

We saw at the beginning of this paper that an excise tax skewing resources away from more desirable goods does not necessarily mean we can recommend an alternative, such as an income tax. But how about a general sales tax, assuming that one can be levied politically with no exemptions of goods or services? Wouldn't such a tax burden be only on consumption and not income?

In the first place, a sales tax would be subject to the same problems as the Fisher consumption tax. Since future and present consumption would be taxed equally, there would again be shifting by each individual so that future as well as present consumption would be reduced. But, furthermore, the sales tax is subject to an extra complication: the general assumption that a sales tax can be readily shifted forward to the consumer is totally fallacious. In fact, the sales tax cannot be shifted forward at all!

Consider: all prices are determined by the interaction of supply, the stock of goods available to be sold, and by the demand schedule for that good. If the government levies a general 20 percent tax on all retail sales, it is true that retailers will now incur an additional 20 percent cost on all sales. But how can they raise prices to cover these costs? Prices, at all times, tend to be set at the maximum net revenue

[11]If net income is defined as gross income minus amount paid in taxes, and for Jones, consumption is 90 percent of net income, a 20 percent consumption tax on $100,000 income will be tantamount to a 15 percent tax on this income. Rothbard, *Power and Market*, pp. 108–11. The basic formula is that *net income*,

$$N = \frac{G}{1 + tc}$$

where G = gross income, t = the tax rate on consumption, and c, consumption as percent of net income, are givens of the problem, and N = G - T by definition, where T is the amount paid in consumption tax.

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point for each seller. If the sellers can simply pass the 20 percent increase in costs onto the consumers, why did they have to wait until a sales tax to raise prices? Prices are *already* at highest net income levels for each firm. Any increase in cost, therefore, will have to be absorbed by the firm; it cannot be passed forward to the consumers. Put another way: the levy of a sales tax has not changed the stock already available to the consumers; that stock has *already* been produced. Demand curves have not changed, and there is no reason for them to do so. Since supply and demand have not changed, neither will price. Or, looking at the situation from the point of the demand and supply of money, which help determine general price levels, the supply of money has remained as given, and there is also no reason to assume a change in the demand for cash balances either. Hence, prices will remain the same.

It might be objected that, even though shifting forward to higher prices cannot occur immediately, it can do so in the longer run, when factor and resources owners will have a chance to lower their supply at a later point in time. It is true that a partial excise can be shifted forward in this way, in the long run, by resources leaving, let us say, the liquor industry and shifting into other untaxed industries. After a while, then, the price of liquor can be raised by a liquor tax, but *only* by reducing the future supply, the stock of liquor available for sale at a future date. But such "shifting" is not a painless and prompt passing on of a higher price to consumers; it can only be accomplished in a longer run by a reduction in the supply of a good.

The burden of a *sales* tax cannot be shifted forward in the same way, however. For resources cannot escape a sales tax as they can an excise tax: by leaving the liquor industry and moving to another. We are assuming that the sales tax is general and uniform; it cannot therefore, be escaped by resources except by fleeing into idleness. Hence, we cannot maintain that the sales tax will be shifted forward in the long run by *all* supplies of goods falling by something like 20 percent (depending on elasticities). General supplies of goods will fall, and hence prices rise, only to the relatively modest extent that labor, seeing a rise in the opportunity cost of leisure because of a drop in wage incomes, will leave the labor force and become voluntarily idle (or more generally will lower the number of hours worked).[12]

In the long run, of course, and that run is not *very* long, the retail

[12]Rothbard, *Power and Market*, pp. 88–93. Also see the notable article by Harry Gunnison Brown, "The Incidence of a General Sales Tax," in *Readings in the Economics of Taxation*, R. Musgrave and C. Shoup, eds. (Homewood, Ill: Irwin, 1959), pp. 330–39.

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firms will not be able to absorb a sales tax; they are not unlimited pools of wealth ready to be confiscated. As the retail firms suffer losses, their demand curves for all intermediate goods, and then for all factors of production, will shift sharply downward, and these declines in demand schedules will be rapidly transmitted to all the ultimate factors of production: labor, land, and interest income. And since all firms tend to earn a uniform interest return determined by social time preference, the incidence of the fall in demand curves will rest rather quickly on the two ultimate factors of production: land and labor.

Hence, the seemingly common-sense view that a retail sales tax will readily be shifted forward to the consumer is totally incorrect. In contrast, the initial impact of the tax will be on the net incomes of retail firms. Their severe losses will lead to a rapid downward shift in demand curves, *backward* to land and labor, i.e., to wage rates and ground rents. Hence, instead of the retail sales tax being quickly and painlessly shifted forward, it will, in a longer-run, be painfully shifted backward to the incomes of labor and landowners. Once again, an alleged tax on *consumption*, has been transmuted by the processes of the market into a tax on *incomes*.

The general stress on forward shifting, and neglect of backward-shifting, in economics, is due to the disregard of the Austrian theory of value, and its insight that market price is determined *only* by the interaction of an already produced stock, with the subjective utilities and demand schedules of consumers for that stock. The market supply curve, therefore, should be vertical in the usual supply-demand diagram. The standard Marshallian forward-sloping supply curve illegitimately incorporates a time dimension within it, and it therefore cannot interact with an instantaneous, or freeze-frame, market demand curve. The Marshallian curve sustains the illusion that higher cost can directly raise prices, and not only indirectly by reducing supply. And while we may arrive at the same conclusion as Marshallian supply-curve analysis for a particular excise tax, where partial equilibrium can be used, this standard method breaks down for general sales taxation.

Conclusion: The Amount vs. the Form of Taxation

We conclude with the observation that there has been far too much concentration on the *form*, the type of taxation, and not enough on its total amount. The result has been endless tinkering with *kinds* of taxes, coupled with neglect of a far more critical question: *how much* of the social product should be siphoned away from the producers?

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Or, how much income should be retained by the producers and how much income and resources coercively diverted for the benefit of non-producers?

It is particularly odd that economists who proudly refer to themselves as advocates of the free market have in recent years led the way in this mistaken path. It was allegedly free market economists for example, who pioneered in and propagandized for, the alleged Tax Reform Act of 1986. This massive change was supposed to bring us "simplification" of our income taxes. The result, of course, was so simple that even the IRS, let alone the fleet of tax lawyers and tax accountants, has had great difficulty in understanding the new dispensation. Peculiarly, moreover, in all the maneuverings that led to the Tax Reform Act, the standard held up by these economists, a standard apparently so self-evident as to need no justification, was that the sum of tax changes be "revenue neutral." But they never told us what is so great about revenue neutrality. And of course, by cleaving to such a standard, the crucial question of total revenue was deliberately precluded from the discussion.

Even more egregious was an early doctrine of another group of supposed free-market advocates, the supply-siders. In their original Laffer-curve manifestation, now happily consigned to the dustbin of history, the supply-siders maintained that the tax rate that maximizes tax revenue is the "voluntary" rate, and a rate that should be diligently pursued. It was never pointed out in what sense such a tax rate is "voluntary," or what in the world the concept of "voluntary" has to do with taxation in the first place. Much less did the supply-siders in their Lafferite form ever instruct us why we must all uphold maximizing government revenue as our beau ideal. Surely, for free-market proponents, one might think that *minimizing* government depredation of the private product would be a bit more appealing.

It is with relief that one turns for a realistic as well as a genuine free-market approach to Jean-Baptiste Say, who contributed considerably more to economics than Say's Law. Say was under no illusion that taxation is voluntary nor that government spending contributes productive services to the economy. Say pointed out that, in taxation, "The government exacts from a taxpayer the payment of a given tax in the shape of money. To meet this demand, the taxpayer exchanges part of the products at his disposal for coin, which he pays to the tax-gatherers." Eventually, the government spends the money on its own needs, so that "in the end . . . this value is consumed; and then the portion of wealth, which passes from the hands of the taxpayer into those of the tax-gatherer, is destroyed and annihilated." Note,

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that as in the case of the later Calhoun, Say sees that taxation creates two conflicting classes, the taxpayers and the tax-gatherers. Were it not for taxes, the taxpayer would have spent his money on his own consumption. As it is, "The state...enjoys the satisfaction resulting from that consumption."

Say proceeds to denounce the "prevalent notion, that the values, paid by the community for the public service, return it again. . . ; that what government and its agents receive, is refunded again by their expenditures." Say angrily comments that this "gross fallacy . . . has been productive of infinite mischief, inasmuch as it has been the pretext for a great deal of shameless waste and dilapidation." On the contrary, Say declares, "the value paid to government by the taxpayer is given without equivalent or return; it is expended by the government in the purchase of personal service, of objects of consumption."

Say goes on to denounce the "false and dangerous conclusion" of economic writers that government consumption increases wealth. Say noted bitterly that "if such principles were to be found only in books, and had never crept into practice one might suffer them without care or regret to swell the monstrous heap of printed absurdity." But unfortunately, he noted, these notions have been put into "practice by the agents of public authority, who can enforce error and absurdity at the point of a bayonet or mouth of the cannon."[13] Taxation, then, for Say is

> the transfer of a portion of the national products from the hands of individuals to those of the government, for the purpose of meeting the public consumption of expenditure . . . It is virtually a burthen imposed upon individuals, either in a separate or corporate character, by the ruling power . . . for the purpose of supplying the consumption it may think proper to make at their expense.[14]

But taxation, for Say, is not merely a zero-sum game. By levying a burden on the producers, he points out, taxes, over time, cripple production itself. Writes Say:

> Taxation deprives the producer of a product, which he would otherwise have the option of deriving a personal gratification from, if consumed . . . or of turning to profit, if he preferred to devote it to an

[13]Jean-Baptiste Say, *A Treatise on Political Economy*, 6th ed. (Philadelphia: Claxton, Remsen & Heffelfinger, 1880), pp. 412–15. Also see Murray N. Rothbard, "The Myth of Neutral Taxation," *Cato Journal* 1 (Fall 1981): 551–54.

[14]Say, *Treatise*, p. 446.

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> useful employment . . . [T]herefore, the subtraction of a product must needs diminish, instead of augmenting, productive power.

J. B. Say's policy recommendation was crystal clear and consistent with his analysis and that of the present paper. "The best scheme of [public] finance is, to spend as little as possible; and the best tax is always the lightest."[15] What conclusion can be more fitting for April 15?

[15]Ibid., p. 449.

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Notes and Replies

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Mises and Hayek on Calculation and Knowledge

Leland B. Yeager

Calculation versus Knowledge

Several Austrian economists have recently introduced an emphatic distinction between calculation problems and knowledge problems besetting socialism. F. A. Hayek, they suggest, has shoved aside or perverted the analysis that Ludwig von Mises got straight in the first place. Especially now that experience in Eastern Europe bears out the arguments of Mises and Hayek, it is important to face the issue of the supposed tension between their positions.

"While Mises saw calculation as *the* problem of socialism," says Jeffrey Herbener (1991, p. 43), "Hayek views it as a knowledge problem." "Mises demonstrated that even with *perfect* information, the central planners in socialism cannot rationally calculate how to combine resources to render efficient production."

According to Joseph Salerno, "Mises unswervingly identified the unique and insoluble problem of socialism as the impossibility of calculation—not, as in the case of F. A. Hayek, as an absence of an efficient mechanism for conveying knowledge to the planners" (Postscript 1990, p. 59, in a section entitled "Mises vs. the Hayekians"). The "Hayekian position criticizing the relative inefficiency of nonmarket mechanisms for discovery, communication, and use of knowledge in the allocation of productive resources" is "categorically different" from the Misesian critique (Ibid., p. 64).

"For Hayek, the major problem for the socialist planning board is its lack of *knowledge*," says Murray Rothbard. Hayek's "argument for the free economy and against statism rests on an argument from ignorance." For Mises, however, the central problem is not

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"knowledge." Even if the planners had perfect knowledge of consumers' value priorities, of resources, and of technologies, "they *still* would not be able to calculate, for lack of a price system of the means of production. The problem is not knowledge, then, but calculability." The "role of the *appraising entrepreneur*, driven by the quest for profits and the avoidance of losses, . . . cannot be fulfilled by the socialist planning board, for lack of a market in the means of production. Without such a market, there are no genuine money prices and therefore no means for the entrepreneur to calculate and appraise in cardinal monetary terms" (Rothbard 1991 in a section on "Fallacies of Hayek and Kirzner," pp. 65–68).

An Untenable Distinction

I question the supposed distinction between calculation and knowledge problems. Mises's own writings, writings of several other interpreters, and my own long acquaintance with the ideas of both Mises and Hayek warrant this question. Beyond citing actual words, I appeal to a heuristic principle of textual interpretation. A writer should be accorded the presumption—defeasible, to be sure—that his arguments cohere in their main lines and are not downright preposterous.

Hayek studied under Mises, though only informally. He once worked for him in a temporary Austrian government office and later was a member of Mises's private seminar. He testifies to the great impact that Mises's *Socialism* had on his own thinking (Foreword to Mises 1981). Hayek's essays on socialist calculation and on the use of knowledge in society (several of them collected in his books of 1935 and 1949) develop and elaborate on insights that were at least implicit in Mises's formulations.

Most briefly, for Mises "[t]he problem of socialist economic calculation is precisely this: that in the absence of market prices for the factors of production, a computation of profit or loss is not feasible" (Mises 1963, p. 705).

But what is the problem that genuine prices help solve? In large part, on my reading of both Mises and Hayek, it is lack of the information (as well as of the incentives) that prices would convey. I cannot believe Mises was merely saying that *if* the socialist planners possessed in some remarkable way all the information normally conveyed by genuine market prices, they still would be stymied by inability to perform *calculations* in the narrow arithmetical sense, an inability that advances in supercomputers might conceivably overcome. Such a reading of Mises's arguments would caricature and trivialize them.

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Economic Calculation

Let us review what economic calculation means and what functions prices perform. (To remind readers briefly of familiar points, I omit elaborations and qualifications that might be necessary to forestall objections; see Yeager and Tuerck 1966, chap. 2.)

Ultimately, additional units of any product cost foregoing other products or benefits that might have been chosen instead. Technology and the scarcity of resources pose the need to choose among alternative patterns of production as rival and practically unlimited desires compete for those resources. The other side of the same coin is choosing how to allocate scarce resources among different lines of production.

How might a definite plot of city land be used most advantageously—as a wheat field, a parking lot, a site for a swimming pool or hotel or office or apartment building, or what? By the logic of the price system, this resource goes under the control of whoever will pay the most. In bidding for its use, business firms estimate how much it can contribute, however indirectly, to producing goods and services that consumers want and will pay for. How much value it can contribute depends not only on physical facts of production but also on the selling price of each of the possible final products, and this price depends in turn partly on opportunities to produce the product in other ways. Wheat grown on cheaper land elsewhere would keep anyone who wanted to use city land to grow wheat from affording to bid highest for it. Not only natural resources but also capital, labor, and entrepreneurial ability thus move into lines of production where they contribute most to satisfying consumer needs and wants, satisfactions being measured by what consumers will pay for them.

Another example concerns public transporation in a particular city. (Compare Mises's example of building a railroad; 1990, pp. 24–25). Should it be supplied by buses burning gasoline, by electric streetcars, in some different way, or not at all? The economically efficient answer depends on more than technology and the physical availability of inputs. It depends also on substitutabilities and complementarities among inputs, on alternative uses of those inputs, and on consumers' subjective appraisals of various amounts of the various outputs of those alternative uses, as well as on appraisals of various amounts of various kinds of public and private transportation. The economically efficient answer even to the relatively simply question of local transportation depends, in short, on unimaginably wide ranges of information conveyed, in abbreviated form, by prices.

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Ideally, in a competitive economy, the price of each product measures not only how consumers appraise it at the margin but also what the total is of the prices of the additional resources necessary to supply an additional unit of it. These prices, in turn, measure what those resources contribute at the margin to values of output in their various uses (as ultimately appraised by consumers) and so measure the values other outputs sacrificed by not using the resources for them instead. Prices therefore tell the consumer how much worth of other things must be forgone to supply him with each particular product. With necessary alternatives brought to his attention in this way, each consumer ideally leaves no opportunity unexploited to increase his expected total satisfaction by diverting any dollar from one purchase to another. In this sense consumers choose the pattern of production and resource-use that they prefer. Ideally, their bidding sees to it that no unit of a resource goes to satisfy a less intense effective demand to the denial of a more intense one.

Mises asks whether central planners, in the absence of and replacing a genuine market, could achieve such a result. This result goes beyond physical meshing of activities as portrayed by a self-consistent input-output table. Even mere physical consistency is itself almost impossible to achieve in the absence of genuine markets and prices, as Soviet experience illustrates (tractors idle for lack of spare parts, food rotting for lack of transport, and so forth). But correct economic calculation is a still more demanding task.

This distinction is close to the surface throughout Mises's discussions of economic calculation. It is evident in his distinction between "technical rationality" and "economic rationality" and in his remark that "technical calculation" is not enough to achieve "general and technological expediency" (1920/1990, p. 48). (Georg Halm says more about economic versus mere technical considerations in Hayek 1935, pp. 173, 187. Compare Hoff 1981, p. 295: "The question . . . is not whether factories can be built and efficiently conducted, but whether the factors of production could have been put to a more advantageous use by employing them elsewhere.")

Economic calculation takes physical relations into account, and far more besides. It takes into account the available quantities of various resources and possibilities of expanding them, the technology of input-output relations, and the physical complimentarities and substitutabilities of various resources in various lines of production. But it also takes into account the subjectively perceived unpleasantnesses and amenities of different kinds of work, changes in the perceived disutilities of work and in the utilities of goods and services as their amounts increase, and complementarities

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and substitutabilities of various goods and services perceived by consumers. Ideally, the result of successful economic calculation—which, to repeat, takes all sorts of subjective as well as physical considerations into account—is a state of affairs in which no further rearrangement of patterns of production and resource use could achieve an increase of value to consumers from any particular good at the mere cost of a lesser sacrifice of value from some other good. (A fuller discussion would introduce the concept of Pareto optimality at this point and explain why some distributional principle is also necessary to narrow a multiplicity of optima down to one. The leading distributional principle in a free-market economy, much modified, is that persons receive the values that the services of themselves and their property command on the market.)

What Mises Meant

Mises's central message, as it comes across to me, is an explanation of why a central planning authority could not accomplish its task and why it must be accomplished, if at all, on a decentralized basis. Mises explains the indispensable role of genuine prices established on genuine markets where traders exchange privately owned goods and services, including capital goods and other productive resources.

Was Mises conceding that information might conceivably somehow be made available to a central planning board in complete and utter detail, including the quantities and supply functions of all productive resources at all locations, all production functions in actual or even potential use, and all utility functions of all persons? Was he supposing, furthermore, that all the mathematical forms and all the parameters of all these functions are precisely known, so that these quantities and functions already imply the marginal productivities of all factors, the marginal technical rates of substitution among all factors and all products, and the marginal utilities of and marginal subjective rates of substitution between all goods and services for all productive units and all persons at each of all conceivable quantitatively specific patterns of production and resource allocation? Was Mises conceding that the planners might conceivably assemble all of this unimaginably detailed information? Was he balking only at the next step, denying that they could use all of it to calculate a pattern of production and resource allocation that would in some sense be optimal? Was Mises conceding everything about the centralized availability of information and then balking only at the possibility of dumping it all into a computer and performing a vast exercise in programming? Does his whole argument boil down to a contention about arithmetic?

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No, of course not. Mises would have thought it preposterous that the planners could even arrive at the threshold of the massive exercise in arithmetic. He was referring to *economic* calculation. The whole sweep of his writings about socialism shows that he was concerned to illuminate the immensity of the problem of achieving an economically rational pattern of production and resource allocation, a problem that market processes do tend to solve. He understood why central planners could not adequately replace them.

Statics or Dynamics?

A subsidiary question concerns whether Mises saw the problem of economic calculation as besetting only a dynamic world, one in which the functions of entrepreneurship must be performed (or botched) somehow or other, or as a problem that, although still more complicated in a dynamic world, would be hugely complicated enough even in a static world. Mises did like to emphasize that changes of all sorts are continually occurring and that the prices to be taken into consideration are not merely "current" prices (which are data of very recent economic history) but also future prices, as best they can be conjectured by entrepreneurial insight. He understood the role of speculation in the broadest sense, including the function undertaken by capitalists and entrepreneurs who speculate not only on prices but also on innovations in markets, products, and production methods and who, instead of merely playing games, are staking their own careers and fortunes. He knew that business firms, far from just being given (as they typically are just postulated in the textbooks), are continually appearing, disappearing, merging, and splitting; these reorganizations are essential features of a dynamic economy.

On the second suggested interpretation, Mises perceived the calculation problem *even* for a static world, a problem that initial discussion in a static context would shed light on. Apparent support for each interpretation occurs in writings of Mises himself and of commentators such as Rothbard and Salerno.

A passage in *Socialism* suggests how to resolve or dissolve the issue:

> [U]nder stationary conditions the problem of economic calculation does not really arise. . . . all the factors of production are already used in such a way as, under the given conditions, to provide the maximum of the things which are demanded by consumers. That is to say, under stationary conditions there no longer exists a problem for economic calculation to solve. The essential function of economic calculation has *by hypothesis* already been performed. There is no need for an

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> apparatus of calculation. . . . the problem of economic calculation is of economic dynamics: it is no problem of economic statics. (1922/1981, p. 120 ; compare Mises 1920/1990, p. 25)

Mises evidently means this: In a static economy, *by definition*, everything rotates around in the same old ruts. No need or scope exists for recalculating those ruts; breaking out of them would violate the assumption of a static state. But a static state does presuppose that economic calculation has already been performed. (It would have had to take account of the vast changes entailed by the very shift from capitalism to socialism.) Even from a background of unchanging "wants, resources, and technology," calculation is necessary to arrive at the pattern of production and resource allocation that thereafter, by the very definition of "static economy," need not and cannot be *re*calculated.

In short, a dynamic world immensely complicates the task of economic calculation that would be hugely complicated even in—meaning even to arrive at—a static state.

Mises's Words Supporting My Interpretation

Many passages in Mises's writings recognize the knowledge aspect of the calculation problem. Already in 1920 (1920/1990, pp. 17–18) he wrote that "administrative control over economic goods . . . entails a kind of intellectual division of labor, which would not be possible without some system of calculating production and without economy." Well, intellectual labor involves knowledge, and division of labor means leaving at least some knowledge, and action on it, decentralized. It is noteworthy that Hayek draws explicit attention to the original German version of this passage (in a talk of 1936 reprinted in Hayek 1949, p. 50 and footnote).

Again in 1920 Mises mentioned the task of gaining a "complete picture" of economic complexities. Technical calculation is not enough to

> guide us in those judgments which are demanded by the economic complex as a whole. Only because of the fact that technical considerations can be based on profitability can we overcome the difficulty arising from the complexity of the relations between the mighty system of present-day production on the one hand and demand and the efficiency of enterprises and economic units on the other; and can we gain the complete picture of the situation in its totality, which rational economic activity requires. (1920/1990, pp. 48–49)

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An intellectual grasp of the whole would be possible in a small household economy, Mises recognizes, but not in a large and complex social economy. Deciding how "to place the means at the service of the end . . . can only be done with some kind of economic calculation. The human mind cannot orientate itself properly among the bewildering mass of intermediate products and potentialities of production without such aid. It would simply stand perplexed before the problems of management and location" (1920/1990, p. 19). As these words suggest, "economic calculation" means something more than an arithmetical exercise, however massive.

Human Action tells us that "knowledge provided by the natural sciences," "the mere information conveyed by technology," is insufficient for "the economic problem: to employ the available means in such a way that no want more urgently felt should remain unsatisfied because the means for its attainment were employed—wasted—for the attainment of a want less urgently felt. . . . What acting man wants to know is how he must employ the available means for the best possible—the most economic—removal of felt uneasiness" (1963, pp. 206–7). Again, Mises indicates that knowledge of wants, resources, and technology must be available to decisionmakers.

Another passage in *Human Action* (1963, p. 696, partly quoted in Salerno 1990, pp. 45–46) seems at first to resist my interpretation. Mises supposes that the director of the socialist economy has already made up his mind about ultimate ends or priorities. Somehow, miraculously, everyone agrees. The director has complete and perfect information about technology and available manpower and material resources. Many experts and specialists stand ready to answer all his questions correctly. "Their voluminous reports accumulate in huge piles on his desk." Now he must choose among an infinite variety of projects in such a way that no more urgent want remains unsatisfied because the necessary means have been diverted to satisfying less urgent wants. Yet despite the vast knowledge available to him, he is unequal to the task.

It might seem, then, that the director's frustration traces to a calculation problem, not a knowledge problem. Yet does the distinction hold? The director cannot even reach the threshold of a comprehensive calculation because he cannot assimilate, all together, all the information that is available to him, in a restricted sense of the word, "in huge piles on his desk." Nor could any committee acting as a single body comprehensively assimilate it all.

If the information is to be used, it must be used in *decentralized* decisions, with prices conveying information to each decisionmaker about parts of the economy beyond his immediate purview. This, it

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seems to me, explains Mises's repeated insistence on genuine market prices, including prices of capital and intermediate goods. He repeatedly returned to thinking of *decentralized* decisionmaking and of the indispensable functions (including the informative function) of prices in that context. Except in a most abstract way, he could not keep on conceiving—nor can I—of a central planner or planning board having obtained all the necessary information and having *assimilated* it into a form ready for feeding into a computer for a vast programming exercise.

Nevertheless, if all relevant knowledge *could* be gathered and assimilated and all other preparations made and if the vast comprehensive calculation *could* be performed, then the immense list of results spewed from the computer would not only prescribe all input and output quantities in detail but also indicate shadow prices of all the inputs and outputs. (A modest acquaintance with linear programming makes this point about shadow prices clear.) It would not be necessary to know the prices in advance (and the calculated prices, unlike the calculated quantities, would be of mere academic interest to the planners).

One might object that the shadow prices emerging from such a calculation would not be identical with genuine prices determined in genuine markets (nor would the associated quantities be identical with market results). This is true, but three possible replies are worth noting. First, the vast information fed into the computer might in principle include psychological data on the persons who would otherwise have been entrepreneurs and other participants in genuine markets. This data would bear on how they would have behaved in response to the opportunities and incentives confronting them in real markets. (On the other hand, it is really only a fiction convenient for economic theorists that people have preexisting and fully developed preference functions or "indifference maps" even before experience in actual markets activates them.) Second, socialists presumably do not desire results identical to those of a market economy anyway. Third, the very objection points to some of the advantages of keeping decisionmaking and the use of knowledge decentralized. It shows further recognition that the problem facing socialism would not be one of mere arithmetic.

The necessary preparations for the vast central calculation, let alone the calculation itself, could *not* be accomplished; they are, to use Mises's word, "impossible." It seems perverse, then, to interpret Mises as nevertheless conceding the possibility of all those preparations and of balking only at the possibility of the calculation itself. He was denying the possibility of *economic* calculation, not merely of

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arithmetical calculation. (Parenthetically, even if we imagine successful mobilization of the data and accomplishment of the arithmetical exercise, vast problems would remain of implementing the results and monitoring everyone's obedience to instructions. Even if the information-conveying function of genuine market prices could somehow be replaced, the incentive function would remain to be somehow performed.)

I submit, then, that even Mises's passage most amenable to the Herbener-Salerno-Rothbard interpretation does not bear out that interpretation on closer examination.

Still, one might ask, if the knowledge aspect was always implicit in his formulation, why didn't Mises make it fully explicit? But how can one know what facts and logical implications, though obvious and as good as explicit to oneself, have escaped other thinkers? One can hardly foresee all of others' misconceptions before they become evident in debate. As Hayek says,

> Mises's arguments were not always easily apprehended. Sometimes personal contact and discussion were required to understand them fully. Though written in a pellucid and deceptively simple prose, they tacitly presuppose an understanding of economic processes—an understanding not shared by all his readers. . . . When one reads Mises's opponents, one gains the impression that they did not really see why [economic] calculation was necessary. . . . As a result [of the discussion], Mises became increasingly aware that what separated him from his critics was his wholly different intellectual approach to social and economic problems, rather than mere differences of interpretation of particular facts. (1922/1981, p. xxii)

Even so, Mises did make himself clear to quite a few readers, as I shall illustrate.

Support from Readers

Perhaps testimony from my own past self is permissible.[1] I have long had an enthusiastic interest in Mises's arguments about socialist calculation and in the ensuing debates. I first happened onto his *Omnipotent Government* and *Bureaucracy* in 1946 or 1947. I eagerly awaited *Human Action* in 1949 (having already had access to its not readily available German precursor for a couple of hours). I gave a paper on the calculation debate at a faculty seminar at Texas A & M

[1]I thank—or blame—Roger Garrison for persuading me to shift this personal testimony from the end to the beginning of this section.

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College (now University) in November 1949. For some time, before finally choosing a different topic, I considered writing my Columbia Ph.D. dissertation on a related problem of socialism. During several years of teaching a course in general-equilibrium theory at the University of Virginia, I used Mises's argument and the whole socialist-calculation debate to illuminate general interdependence and the various tasks to be accomplished somehow or other in any economic system. The conventional wisdom about Oskar Lange's having refuted Mises's argument never deceived me.

And I never understood that argument to be about calculation in the narrow arithmetical sense. I always understood Mises to be referring to the informational and other functions of prices that do get performed in a genuine market economy and that could not be performed or adequately replaced in a socialist economy. I always understood Hayek to be elaborating on ideas that were clearly implicit if not always totally explicit in Mises's work; I never dreamed that the issue might arise of a clash between their positions.

Hayek has long recognized Mises's concern with the use of knowledge—"of all the relevant facts." Mises, he says, provided

> the detailed demonstration that an economic use of the available resources was only possible if . . . pricing was applied not only to the final product but also to all the intermediate products and factors of production, and that no other process was conceivable which would take in the same way account of all the relevant facts as did the pricing process of the competitive market. (Hayek 1935, p. 33)

Georg Halm stated Mises's argument as follows: The socialist authority would know various things, "*but it would not know how scarce capital was*. For the scarcity of means of production must always be related to the demand for them, whose fluctuations give rise to variations in the value of the good in question" (1935, pp. 162–63, also quoted in Rothbard 1991, p. 62).

Oskar Lange, whom Mises's arguments prodded to invent a sketch of "market socialism," interpreted Mises as having traced the impossibility of rational socialist planning largely to inaccessibility of necessary "data." Lange countered that "The administrators of a socialist economy will have exactly the same knowledge, or lack of knowledge, of the production functions as the capitalist entrepreneurs have" (1938, pp. 60–61).

Lange thought he had refuted Mises by showing that an artificial market would render calculation possible, says Jacek Kochanowicz (introduction to Mises 1990, pp. xi–xii). Presumably following Mises

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on what calculation meant, then, Lange did not interpret it as merely accomplishing a task in arithmetic.

Incidentally, Lange (1938, p. 61) accused Mises of confusing two senses of the term "prices," "the exchange ratios of commodities on a market" and the wider sense of "terms on which alternatives are offered." Not so: Mises did not need the distinction. He did not believe it possible to obtain meaningful prices of either kind except through genuine market processes.

Solomon Fabricant recognizes the role of knowledge in Mises's argument. "[I]n a free society, as was pointed out above all by Mises and Hayek, individuals have the authority and the incentives to use the particular knowledge which they—and only them—possess to adapt most economically to the incessant changes that go on in a dynamic world. This stock of knowledge includes detailed information that no central authority could ever hope to gather, digest and apply in formulating its plans and making its decisions" (1976, pp. 30–31; one footnote is not quoted here).

Trygve Hoff mentions knowledge in interpreting Mises's argument: Without prices for the means of production, "the central authority will lack the necessary data to determine how and in what combination the various means of production can be put to the optimum use. . . . Without prices for means of production the central authority will have no data for determining whether the contribution and the sacrifice are greater or smaller than the result" (Hoff 1938/1981, pp. 202–3; further remarks about "data" occur on pp. 223 and 288).

Karen Vaughn attributes to Mises the "vehement assertion that the information necessary for economic calculation could be obtained only through market-determined prices." In 1935, Hayek "expanded upon Mises's original contention that economic calculation is impossible without market prices to provide relevant information." "Following Hayek and Mises, Hoff notes that . . . [a] central planning board necessarily lacks . . . vital market information" indicated by prices (Vaughn, introduction to Hoff 1938/1981, pp. xi, xvi, xxx).

Don Lavoie, writing before Rothbard, Salerno, and Herbener had tried to distinguish between the positions of Mises and Hayek, repeatedly says that they were expounding the same position. Hayek elaborated on some of Mises's points, especially ones about knowledge and on the necessity of genuine rivalrous markets for capital goods and other factors of production so that the factor prices established there could convey essential information. Contrary to the standard account of the socialist-calculation debate, Mises and Hayek did not shift their ground. They did change their emphasis to respond to

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suggestions for market socialism after the socialists, or some of them, had shifted *their* ground.

It would be tedious to quote all the passages in which Lavoie recognizes the essential identity of Mises's and Hayek's positions. I refer the reader, in particular, to pages 15 n., 21, 24, 26, chapter 3 (entitled "Mises's Challenge: the Informational Function of Rivalry"), pages 87, 89, 91–92, 102, 114–15, 123, 145, 160–61, 173 n., 177–78, and 180. Consider, however, these two passages: "The entrepreneurial market process . . . generates the continuously changing structure of knowledge about the more effective ways of combining the factors of production. This knowledge is created in decentralized form and dispersed through the price system to coordinate the market's diverse and independent decisionmakers. There is no way, Mises claimed, in which this knowledge can be generated without rivalry" (Lavoie 1985, p. 24). Hayek's improvements of Mises's argument "should be understood as essentially an elaboration of the meaning that Mises originally attached to his own words" (Lavoie 1985, p. 26).

Lavoie makes a useful distinction between economic *calculation*, the problem that Mises addressed, and mere *computation*, the arithmetical aspect (1985, pp. 91, 119, 122, 128, 133, 144, 160, 168 n., 182, and passim).

Yuri Maltsev hails Mises's demonstration of 1922 that

> Socialist planning . . . is *logically impossible* because the system cannot provide the knowledge required to determine which production projects are desirable and feasible and which are not. Only the market, with what Mises called its "intellectual division of labor," can generate that knowledge and put it in a usable form. (Foreword to Boettke 1990, pp. xii–xiii)

Peter Boettke repeatedly notices the role of knowledge in Mises's argument; for example:

> Implicit in Mises's logical chain of reasoning is the recognition that no one mind or group of minds could possess the necessary knowledge to plan the economic system. . . . Mises states this knowledge problem in his original challenge. . . . [A]s Mises notes, market exchange and production within a monetary economy provide for the discovery and dissemination of the knowledge necessary [for coordinating computations]. (Boettke 1990, p. 23, and compare pp. 24, 26, 28, 123, 170–71, 195)

Joseph Persky (1991, p. 229) reads Mises as "emphasiz[ing] that a collectivist state would have great difficulty in gathering and

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acting on relevant information; therefore, under socialism, even well-intentioned bureaucrats would lack a meaningful system of values on which to calculate."

Robert L. Heilbroner, who had long expressed sympathy for socialism, has recently acknowledged that Mises was right all along. The few economists who early predicted disaster from central planning were led, Heilbroner says, by "Ludwig von Mises and Friedrich Hayek. . . . Their diagnosis was based on the inability of a planned system to generate the *information* needed to bring into being, or to maintain in being, a properly interlocking economic system. This information is automatically generated by a market mechanism that every day 'informs' its individual participants whether their activities are wanted by other participants or not, but no substitute for this information network, or for the motivation to put the information to work, exists in a system in which a cumbersome bureaucracy tries to play the role of a competitive marketplace" (Heilbroner 1991, p. 114, emphasis in original).

Perhaps surprisingly, Murray Rothbard also lends support to my interpretation. "The fact that in a changeless world of perfect knowledge and general equilibrium a Social Planning Board could 'solve' equations of prices and production was for Mises a worse than useless demonstration. Clearly, as Hayek would later develop at length, if complete knowledge of economic reality is assumed to be 'given' to all, including a Planning Board, there is no problem of calculation or, indeed, any economic problem at all, whatever the economic system. The Mises demonstration of the impossibility of economic calculation under socialism and of the superiority of private markets in the means of production applied only to the real world of uncertainty, continuing change, and scattered knowledge" (Rothbard 1976, p. 68).

Rothbard cites Mises's refutation of Oskar Lange's idea (1938) that a socialist planning board could arrive at correct prices, even of capital goods, through trial and error. He mentions "signals," clearly implying they convey information: "the process of trial and error works on the market because the emergence of profit and loss conveys vital signals to the entrepreneur, whereas such apprehensions of genuine profit and loss could not be made in the absence of a real market for the factors of production" (Rothbard 1976, p. 71).

Admittedly, Rothbard seems to have changed his mind later. Yet as recently as in his 1991 article (p. 52, emphasis supplied here), he paraphrases Mises as asking the following about the socialist planners:

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> How would they *know* what products to order their eager slaves to produce, at what stage of production, how much of the product at each stage, what techniques or raw materials to use in that production and how much of each, and where specifically to locate all this production? How would they *know* their costs, or what process of production is or is not efficient?"

Rothbard continues recognizing the knowledge aspect of the problem:

> Mises points out that while the government may be able to know what ends it is trying to achieve, and what goods are most urgently needed, it will have no way of knowing the other crucial element required for rational economic calculation: valuation of the various means of production, which the capitalist market can achieve by the determination of money prices for all products and their factors. (1991, p. 63)

Even a perfectly knowledgeable person, says Salerno (1990, Postscript, p. 53) "would be unable to even achieve a full intellectual 'survey' of the [planning] problem in all its complexity." But doesn't this mean: unable to pull together all the scattered relevant knowledge? Salerno notes, approvingly, that Mises recognized the necessity of an "intellectual division of labor" (Ibid., p. 54). This is another allusion to the impossibility of centralizing all the scattered relevant knowledge.

Even if the planners had various other knowledge, the central planners would be unable "to ever know or guess the 'opportunity cost' of any social production process" (Ibid., p. 55).

Conclusion

Just what was Mises's position? Salerno briefly but correctly restates it: "without private ownership of the means of production, and catallactic competition for them, there cannot exist economic calculation and rational allocation of resources under conditions of the social division of labor. In short, socialist economy and society are impossible" (Ibid., p. 66). This formulation leaves room to be amplified. It does *not* focus merely on immense arithmetic difficulties at the stage of calculation in the strictest sense of the term, conceding that the planners might accomplish their task right up to that stage. I challenge readers who insist on distinguishing between calculation and knowledge problems to find passages in which Mises can reasonably be interpreted as making that distinction and expressing concern only with calculation but not with knowledge.

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To deny that Hayek was elaborating on what Mises said about economic calculation and to maintain that Hayek was saying something distinct and even incompatible is to truncate and misrepresent what Mises did say. To cut away all aspects of his message on which Hayek elaborated is to trivialize his message, quite inaccurately, into a proposition about arithmetical exercises.

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Reply to Leland B. Yeager on "Mises and Hayek on Calculation and Knowledge"

Joseph T. Salerno

In this article on "Mises and Hayek on Calculation and Knowledge," Leland Yeager argues against the view recently propounded by Murray Rothbard, Jeffrey Herbener, and myself that calculation and knowledge constitute separate and distinct problems of economic organization and that Ludwig von Mises attributed the impossibility of socialism exclusively to its inability to solve the former problem. In rebuttal, Yeager alleges that calculation, as this term is used by Salerno, Rothbard, and Herbener (henceforward, SRH) refers narrowly to a trivial arithmetic operation and that it is, therefore, preposterous and a violation of a putative principle of hermeneutics, i.e., "a heuristic principle of textual interpretation," to identify, as SRH do, calculation in this sense as the crux of Mises's critique of socialist central planning.

Yeager seeks to buttress his hermeneutical case by arguing that if the knowledge problem is solved, i.e., if the central planners are miraculously endowed with knowledge of all previously discovered production functions currently used or potentially useful, in addition to exhaustive and minutely detailed information regarding the quantities, qualities, and locations of existing resources and the global set of consumer value scales (comprehensively defined to include leisure and time preferences as well as preferences for the various types of labor), then all that remains to be done to effect a rational or "Pareto optimal" allocation of resources is to address a relatively tractable problem in linear programming that can be

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solved using a supercomputer. Yeager thus claims to be logically confirmed in his conclusion that, in dismissing the knowledge problem from consideration, SRH are construing the calculation problem in a limited and trifling sense that "trivializes and caricatures" Mises's critique of socialism.

There is not much to say about Yeager's main allegation, except that it is wholly beside the point, because it rests on a gross misinterpretation of the meaning explicitly attached to the term "calculation problem" by SRH. It is true that as SRH use the term "economic calculation" it encompasses and culminates in arithmetic computations undertaken to identify the most valuable employments of scarce resources in an economy characterized by specialization and division of labor, e.g., the profit calculations of entrepreneurs operating in a market economy. However, it does not follow that, for SRH, *the* calculation problem as Mises conceived it refers narrowly to the mathematical techniques employed for manipulating the given quantitative data; it refers, instead, to the origination and meaningfulness of the data themselves. It is, in short, a problem of "appraisement" and not of "arithmetic."

As SRH have repeatedly emphasized, the Misesian demonstration of the logical impossibility of socialism is not predicated on the central planners' incapacity to perform tasks that can conceivably be carried out by individual human minds (e.g., discovery of factual and technical knowledge, mathematical computations, managerial monitoring, and prevention of labor shirking, etc.). Rather, it is concerned with the lack of a genuinely competitive and social market process in which each and every kind of scarce resource receives an objective and quantitative price appraisement in terms of a common denominator reflecting its relative importance in serving (anticipated) consumer preferences. This social appraisement process of the market transforms the substantially qualitative knowledge about economic conditions acquired individually and independently by competing entrepreneurs, including their estimates of the incommensurable subjective valuations of individual consumers for the whole array of final goods, into an integrated system of objective exchange ratios for the myriads of original and intermediate factors of production. It is the elements of this coordinated structure of monetary price appraisements for resources in conjunction with appraised future prices of consumer goods which serve as the data in the entrepreneurial profit computations that must underlie a rational allocation of resources.

That appraisement and not arithmetic constitutes the essence of the calculation problem is clearly indicated in numerous passages from the works of Salerno and Rothbard cited by Yeager.

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Unfortunately, Yeager ignores these key passages. For example,in one of my articles (Salerno 1990a, pp. 54–56) quoted by Yeager, I identify the crucial bearing of entrepreneurial competition in resource markets on the problem of economic calculation:

> In this competitive process, each and every type of productive service is objectively appraised in monetary terms according to its ultimate contribution to the production of consumer goods. There thus comes into being the market's monetary price structure, a genuinely "social" phenomenon in which every unit of exchangeable goods and services is assigned a socially significant cardinal number and which has its roots in the minds of every single member of society yet must forever transcend the contribution of the individual human mind.
>
> Since the social price structure is continually being destroyed and recreated at every moment of time by the competitive appraisement process operating in the face of ceaseless change of the economic data, there is always available to entrepreneurs the means of estimating the costs and revenues and calculating the profitability of any thinkable process of production.
>
> Once private property in the nonhuman means of production is abolished, however, as it is under socialism, the appraisement process must grind to a halt. . . . In the absence of competitive bidding for productive resources by entrepreneurs, there is no possibility of assigning economic meaning to the amalgam of potential physical productivities embodied in each of the myriad of natural resources and capital goods in the hands of the socialist central planners. . . .
>
> A society without monetary calculation, that is, a socialist society, is therefore quite literally a society without an economy.

Later in the same work (Salerno 1990a, pp. 62–63), I portray the Misesian case against market socialism in similar terms:

> From the Misesian point of view . . . the shortcomings of the prices of market socialism do not stem from the fact that such prices are supposed to be treated as "parametric" by the managers. . . . The problem is precisely that such prices are *not* genuinely parametric from the point of view of all members of the social body. The prices which emerge on the free market are meaningful for economic calculation because and to the extent that they are determined by a social appraisement process, which, though it is the inevitable outcome of the mental operations of all consumers and producers, yet enters as an unalterable fact in the buying and selling plans of every individual actor.

It is obvious from the foregoing passages that I conceive appraisement as neither knowledge nor arithmetic, but as something new

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under the sun, introduced into the world only when the institutional prerequisites of a market economy are fulfilled. The social process of appraising thus transcends the purely individual operations of knowing and computing at the same time that it complements them in creating the indispensable conditions for rational choosing by entrepreneurs and resource owners cooperating in the division of labor. In fact, in another work cited by Yeager, I specifically refer to Mises's distinction between "cardinal numbers and their arithmetic properties [which] are 'eternal and immutable categories of the human mind'" and "economic calculation [which] is 'only a category inherent in acting under special conditions'" (Salerno 1990b, p. 45).

In explicating what I take to be Mises's view, then, I clearly do not contend that the advent of socialism suddenly and mysteriously renders men unable to perform arithmetic operations. Rather, it is and always has been my contention that socialism abolishes the *quantitative appraisement* of means without which man's computational skills and his knowledge of particular facts and general technical rules would be completely useless in guiding production within the framework of the social division of labor. As I conclude in the latter article "It is because socialism lacks the means to calculate, therefore, that Mises emphatically denies that men 'are free to adopt socialism without abandoning economy in the means of production'. . . . In fact Mises conceived *the* social advantage of the price system to be that it made practicable human society itself by providing the cardinal numbers for computing the costs and benefits of purposive action undertaken within the social division of labor" (Salerno 1990b, p. 48).

I also indicate that Mises's concept of "the intellectual division of labor" refers to the necessity of the existence of independent intellects and wills—of capitalist-entrepreneurs, laborers, landowners, and consumers—for the quantitative appraisement of the means of social action (Salerno 1990b, pp. 41–42). In contrast, Yeager construes Mises's concept as an embryonic version of Hayek's "division of knowledge." Thus, Yeager (p. 97) draws the wrong conclusion from his important insight that "intellectual labor involves knowledge, and division of labor means leaving at least some knowledge, and action on it, decentralized." A price system is not required because useful knowledge is dispersed, as Yeager infers from this insight; rather, knowledge must be decentralized (among competing entrepreneurial forecasters and appraisers) in order for a system of prices to come into being which meaningfully indicates the relative scarcities of useful resources. Or, to put it more starkly, dispersed knowledge is not a bane but a boon to the human race; without it, there would be no scope for the intellectual division of labor, and social cooperation

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under division of labor would, consequently, prove impossible. Thus, a world exactly like our own but ruled by a perfectly beneficent and "empathic" overlord, who, in Star Trekian fashion, could, fully and instantaneously, mentally assimilate his subjects' subjective valuations and knowledge, would be unable to develop a sophisticated structure of capital and production for lack of a means of appraisement.

Rothbard, also, in his articles referred to by Yeager, is pellucidly clear that the calculation problem identified by Mises goes far beyond a piddling arithmetic problem. As well, it involves far more than the difficulty of acquiring qualitative information about previously prevailing market conditions. As Rothbard (1991, p. 66) writes:

> The problem is not knowledge . . . but calculability. [T]he *knowledge* conveyed by present—or immediate "past"—prices is consumer valuations, technologies, supplies, etc. of the immediate or recent past. But what acting man is interested in, in committing resources into production and sale, is *future* prices, and the present committing of resources is accomplished by the entrepreneur, whose function is to *appraise*—to anticipate—future prices, and to allocate resources accordingly. It is precisely this central and vital role of the *appraising entrepreneur*, driven by the quest for profits and the avoidance of losses, that cannot be fulfilled by the socialist planning board, for lack of a market in the means of production. Without such a market, there are no genuine money prices and therefore no means for the entrepreneur to calculate and appraise in cardinal monetary terms.

In a second article quoted from by Yeager, Rothbard (1992, p. 20) nicely epitomizes the SRH interpretation of economic calculation: "the prices provided by the market, especially the prices of means of production, are a *social* process, available to all participants, by which the entrepreneur is able to appraise and estimate future costs and prices. In the market economy, *qualitative* knowledge can be transmuted, by the free price system, into rational economic calculation of *quantitative* prices and costs, thus enabling entrepreneurial action on the market."

Given the weighty textual evidence I have adduced above to counter his claim that SRH construe the calculation problem as one of arithmetic, Yeager appears to be transgressing against his own hermeneutical principle of refraining from attributing preposterous and incoherent positions to one's opponents without having fully and sympathetically engaged their arguments. Nevertheless, I do not believe that it would be fair or accurate to ascribe Yeager's palpable

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misreading of SRH's position to unrestrained eagerness to seize a polemical advantage or to shoddy scholarship. Rather, I believe that the source of Yeager's erroneous characterization of our position lies in his static view of the function of prices and economic calculation. This view is revealed in the logical argument he advances to deny any but the most trivial distinction between knowledge and calculation, an argument intended to bolster his textually unsupported claim that SRH equate calculation and arithmetic.

In the section on "Economic Calculation," which precedes and introduces his own rendering of "What Mises Meant," Yeager (pp. 92–95) delineates his view of the functions performed by prices. Proceeding in a Hayekian vein, Yeager characterizes market prices as a substitute for the perfect knowledge that is assumed by neoclassical theorists to be possessed by all market participants. However, as I have argued elsewhere (Salerno 1993, pp. 126–29), for prices to perform such a knowledge-disseminating function, it is necessary for the economy to already subsist in a quasi-static state or what I have dubbed "proximal equilibrium" (PE), wherein genuine uncertainty and the need for entrepreneurial appraisement are absent and current prices are an approximately correct guide to future prices. Indeed, this is the view taken by Hayek (1978, p. 82) himself, who writes that "the function of prices is precisely to communicate, as rapidly as possible, signals of changes of which the individual cannot know but to which his plans must be adjusted. This system works because on the whole current prices are fairly reliable indications of what future prices will probably be." Elsewhere, Hayek (1940, pp. 27–28) argues that "real conditions . . . do to some extent so approximate [towards a state of equilibrium], and . . . the functioning of the existing economic system will depend on the degree to which it approaches such a condition."

Yeager does not shrink from the PE implications of the Hayekian description of the function of prices. Indeed, he embraces them wholeheartedly, arguing that economic calculation employing knowledge-laden prices functions "ideally" to maintain the economic system in competitive long-run equilibrium characterized by a Pareto-optimal allocation of resources. Yeager's argument is encapsulated in the following four statements extracted from his section on "Economic Calculation" (Yeager, pp. 92–95):

> "*Ideally*, in a competitive economy, the price of each product measures not only how consumers appraise it at the margin but also what the total is of the prices of the additional resources necessary to supply an additional unit of it [i.e., $P_i=MC_i$]."

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> "Each consumer *ideally* leaves no opportunity unexploited to increase his expected total satisfaction by diverting any dollar from one purchase to another [i.e., $MU_1/P_1=MU_2/P_2= \ . \ . \ . \ =MU_n/P_n$, implying perfect arbitrage of individual commodity prices and the overall purchasing power of money]."
>
> "*Ideally*, [consumers'] bidding sees to it that no unit of a resource goes to satisfy a less intense effective demand to the denial of a more intense one [i.e., $P^F_j=MVP_j$]."
>
> "*Ideally*, the result of successful economic calculation . . . is a state of affairs in which no further rearrangement of patterns of production and resource use could achieve an increase of value to consumers from any particular good at the mere cost of a lesser sacrifice of value from some other good [i.e., $P_i=AC_i$]. (A fuller discussion would introduce the concept of Pareto optimality at this point.)"[1]

Yeager's repetition of the term "ideally" in this context, which I have emphasized, is apparently intended to connote that the outcome of the "real" economic process only approximates the "ideal" of Pareto optimality.[2] Yeager goes on to impute this static conception of the function of economic calculation to Mises, despite his recognition that "Mises did like to emphasize that changes of all sorts are continually occurring and that the prices to be taken into consideration are not merely 'current' prices (which are the data of very recent economic history) but also future prices, as they best can be understood by entrepreneurial conjecture" (Yeager, p. 96). After this

[1]The meaning of the symbols in my interpolations in this citation are as follows:

P = price of product
MC = marginal cost
MU = marginal utility
P^F = price of factor of production
MVP = marginal value product
AC = average cost
i = ith product where i = 1, . . ., n and n = total number of products
j = jth factor where j = 1, . . ., m and m = total number of factors

[2]For a fuller treatment of the function of the price system, Yeager refers the reader to a discussion in another one of his works. There, Yeager (1966, pp. 13–30) cites the usual static neoclassical reasons involving externalities and monopoly for the failure of the market to achieve the ideal allocation of resources, but he tends to downplay their practical significance. However, he does not even hint at the dynamic considerations that prevent actual, moment-to-moment market prices from ever coming close to fulfilling their PE role as "signals of opportunity cost," which are supposed to accurately guide market participants to a Pareto-optimal pattern of resource use.

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grudging admission, however, Yeager (p. 97) proceeds to relegate such dynamic considerations, in the fashion of classical economics, to the status of "frictions" or "disturbing causes" that "immensely complicate" but do not alter the main task of economic calculation, which is to point the way to the ideal resource allocation of the static state.

We can now explain why Yeager refuses to distinguish between calculation and knowledge and why he misses the significance of the distinction drawn by SRH. With the economy always in PE and current prices therefore conveying to producers virtually complete knowledge about relevant economic conditions in the present and the future, the only function that remains for entrepreneurs is to robotically compute revenue and cost functions and allocate resources so as to equate MR and MC. Since the acquisition and use of knowledge is thus presented as the essence of economic calculation, should the central planners somehow or other get hold of the same knowledge in the absence of a price system, the entrepreneurial computation problem could be easily solved by the methods of linear programming, which would yield the identical (Pareto-optimal) allocation of resources. This is the implication of Hayek's statement that the price system "brings about the solution which (it is just conceptually possible) might have been arrived at by one single mind possessing all the information which is in fact dispersed among all the people involved in the process" (Hayek 1972, p. 86).

For Yeager, Hayek, and equilibrium theorists of all stripes, then, an appraisement process is not necessary because, in the words of general equilibrium (GE) theorist J. R. Hicks (quoted in Walsh and Gram 1980, pp. 241, 179),

> the price mechanism is something that is inherent. It did not have to be . . . brought in from outside. . . . It has been made apparent [by linear programming theorists], not only that a price system is inherent in the problem of maximizing production from given resources but also that something like a price system is inherent in any problem of maximizing production against restraints. The imputation of prices (or "scarcities") to the factors of production is nothing else but a measurement of the intensities of the restraints; such intensities are always implicit—the special property of a competitive [price] system is that it brings them out and makes them visible. . . . If we take the famous definition, given so many years ago by Lord Robbins—'the relationship between ends and scarce means that have alternative uses'—economics, in that sense, is well covered by linear theory.

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This reasoning, of course, also underlies the position taken by neoclassically-trained market socialists such as Oskar Lange. In a posthumously published reflection on his contribution to the socialist calculation debate, Lange (1974, p. 137) wrote:

> The market process with its cumbersome *tatonnements* appears old-fashioned. Indeed, it may be considered as a computing device of the pre-electronic era.
>
> The market mechanism and trial and error procedure proposed in my [original] essay really played the role of a computing device for solving a system of simultaneous equations. The solution was found by a process of iteration which was assumed to be convergent. . . .
>
> The same process can be implemented by an electronic analogue machine which simulates the iteration process implied in the *tatonnements* of the market mechanism. Such an electronic analogue (servo-mechanism) simulates the working of the market. This statement, however, may be reversed: the market simulates the electronic analogue computer. In other words, the market may be considered as a computer *sui generis* which serves to solve a system of simultaneous equations.

Thus market-oriented PC theorists, such as Hayek and Yeager, and neoclassical/socialist GE theorists are brothers under the skin. The former, who according to Yeager include Mises, ultimately do not gainsay the claim of the latter that the price system is "in" the data and that the market performs essentially the same function as an equation-solving computer. All of Hayek's subtle argumentation in his classic triad of articles on knowledge (Hayek 1972a; Hayek 1972b; Hayek 1972c) amounts only to the denial that all the relevant data could ever be assembled in one place and, to use Yeager's term, "assimilated" by one mind preparatory to being fed into the computer.[3] Thus is Yeager (p. 99) led to conclude, in agreement with Hicks

[3]In his article on "Economics and Knowledge," Hayek (1972a, pp. 41–42 n. 6) sought, among other objectives, to "dynamize" the concept of equilibrium and give it empirical applicability by dissolving the link between equilibrium conceived as a coinciding of subjective expectations held by diverse individuals and the concept of the "stationary state" based on the constancy of the underlying objective data. It is now generally known that Hayek's article was intended in part as a critique of Mises, whose praxeological approach to economic theory included a (strictly subsidiary) role for the mental construct of a stationary state or "evenly rotating economy." This is of great doctrinal significance in light of the fact that Hicks's attempted dynamic recasting of GE theory in *Value and Capital*, which, Hicks (1968, p. vi) has revealed, was largely based on ideas "conceived at the London School of Economics during the years 1930–35," was prompted by precisely the same considerations. In fact, Hicks (1968, p. 117) specifically criticized "the method of the Austrians" for its "concentration on the case of a Stationary State." Moreover both Hicks (1968, pp. 119–21) and Hayek (1972a,

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and Lange, that "if all relevant knowledge *could* be gathered and assimilated and all other preparations made and if the vast comprehensive calculation *could* be performed, then the immense list of results spewed from the computer would not only prescribe all input and output quantities in detail but also indicate shadow prices of all inputs and outputs."

It is because of his PE mindset, then, that Yeager is unable to perceive what is to SRH the very pith of Mises's calculation argument: first, that the market creates a social appraisement process which is *not* implicit in the informational parameters of the equation system and which depends crucially on an intellectual division of labor featuring the qualitative *understanding* of competing entrepreneurs; and, second, that this process is indispensable for converting the multidimensional knowledge of the economic data, regardless of who possesses this knowledge or where it is located, into a unitary structure of meaningful resource and product prices.

That Yeager's attempt to portray Mises as a PE theorist is untenable and that SRH's view of Mises as a dynamic appraisement theorist is indeed the correct one is compellingly evinced by Mises's definitive response in *Human Action* to the proposed mathematical solution to socialist calculation. Here Mises (1966, pp. 710–15) makes it crystal clear that the static prices mathematically imputed from perfect knowledge of the economic data would not lead to a dynamically efficient allocation of resources. The latter can only be achieved by the entrepreneurially appraised prices that are generated by the historical market process.

In arriving at this conclusion Mises first considers a situation in which the central planner is endowed with perfect knowledge of the existing economic data. Mises points out, however, that such data would include a stock of intermediate or capital goods, which, in a world of unrelenting change and uncertainty and of consequent entrepreneurial error, is necessarily maladapted to the primary data of wants, technology, and "original" resources, i.e., permanent and/or nonreproducible labor and land. Nonetheless, the existing inventories of nonpermanent, reproducible items that constitute this disequilibrium capital stock are cast as "parameters" in the system of simultaneous equations. Solving this system would therefore yield a static or Pareto-optimal allocation of resources and a related shadow

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p. 41 n. 6) credit Alfred Marshall with pointing the way to the proper use of the equilibrium technique. Thus Hayekian PE and modern GE theory have common roots. For an illuminating discussion of the seminal influence of Hayek's work on Hicks's initial endeavors in GE theory, see E. Roy Weintraub (1991, pp. 30–31).

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price system. But this static solution cannot possibly elucidate the series of steps that must be initiated today to progressively and efficiently transform the structure of capital goods through a sequence of further disequilibrium states towards its (presently unknown) equilibrium configuration.

Indeed, thirty years after Mises elaborated this argument, dissident GE theorists were just beginning to catch a glimpse of its significance. Thus, as Vivian Walsh and Harvey Gram (1980, pp. 182–83) frankly and perceptively noted at the time:

> The intended interpretation of neoclassical allocation theory depends fundamentally on the meaning attached to the parameters that enter into its structural relationships. . . . In a model of neoclassical allocation theory it is of no importance to distinguish inputs on the basis of the process by which they came into being. . . . Indeed, the *only* historical fact that has any bearing on the analysis is that a given quantity of resources has come into existence and is now available at a point in time to be used in ways that may or may not have been anticipated when these resources were produced. . . . Thus the categories land, labor, and "capital" are only descriptive; they have *no analytical significance* in static allocation models. . . . [N]eoclassical theory does not deny the reproducibility of the means of production. It simply takes no account of this reproducibility in its analysis of prices and quantities. . . . Thus, the flow of services of a diesel engine may enter as a factor input into certain technical processes, but it is immaterial to the theory's treatment of production that the engine itself is the result of a previous investment of resources as opposed to a free gift of nature dropping, as it were, from Heaven![4]

[4]Hicks's earlier theory of the "Traverse" was an abortive attempt by a GE theorist to come to terms with, or escape from, a similar insight. Wrote Hicks (1972, pp. 183–84): "[I]n the real world changes in technology are incessant; there is no time for an economy to get into equilibrium (if it was able to do so) with respect to January's technology, before that of February is upon it. It follows that at any actual moment, the existing capital cannot be that which is appropriate to the existing technology. . . . Every actual situation differs from an equilibrium situation by reason of the inappropriateness of its capital stock." Despite this recognition, however, Hicks apparently found it would be "very inconvenient" to abandon GE theory in order to "analyze the transition from one out-of-equilibrium position to another, so Hicks's Traverse is a traverse from one growth equilibrium to another" (Collard 1993, p. 343). Needless to say, Hicks's theory of the adjustment path, worked out on the assumption of a "fixprice" policy and a change in technology that does not influence relative prices, is unable to illuminate how monetary calculation guides entrepreneurs in choosing the most valuable uses (from the point of view of their current forecasts of future market conditions) for the perennially inappropriate capital stock. For a polite but devastating critique of Hicks, see Lachmann (1977).

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Now, Mises's calculation argument focuses on a situation characterized by the absence of competitive appraisement of current resource prices based on entrepreneurial forecasting of the successive changes in the data that occur during the extended transition to the final equilibrium. In these circumstances, there is absolutely no possibility of determining whether and to what extent current productive services should be devoted to, e.g., maintaining existing railroad diesel engines, initiating a highway expansion project, constructing a new truck assembly factory, converting military cargo planes to civilian uses, etc. The shadow prices generated by the Lange-Hicks-Yeager linear programming "solution" are therefore incapable of providing the guiding light of economic calculation. And it is this alone which can save human actors from blindly toppling over into the abyss of irrationality and arrant wastefulness when choosing among social (i.e., nonautarkic) production processes.

Let us even grant further, as Mises (1966, pp. 713–14) does, that the central planner is miraculously inspired with an exact image of the final equilibrium state that is perfectly adjusted to the primary data of the problem. Without recourse to a social appraisement process, the planner would still be unable to calculate a transition plan that economically utilizes the services of the current capital stock. Of course, dynamic appraisement is even more important in the real world. Here, exogenous changes in the data continually deflect the economy from any temporal progression toward a given equilibrium. Thus, all entrepreneurial actions and innovations are guided by anticipated future prices reflecting, according to Mises (1966, p. 711), "only the first steps of a transformation" of market conditions in the direction of equilibrium.

It is instructive to consider the series of rhetorical questions posed by Yeager (p. 96) midway into his article. These are designed to drive home his point that Mises could not possibly have been contending about arithmetic. But once it is finally understood that Mises's arguments about calculation referred neither to arithmetic nor to knowledge but to appraisement, it also becomes quite clear that these questions do not merit the answer Yeager seeks to elicit. Representative of Yeager's queries are: "Was Mises conceding that the planners might conceivably assemble all of this unimaginably detailed information [about the economic data]? Was he balking only at the next step, denying that they could use all of it to calculate a pattern of production and resource allocation that would in some sense be optimal?" To these questions I reply with a resounding "Yes, indeed!" Mises did concede, for the sake of argument only, that

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planners possessed perfect information.[5] But he emphatically denied that this information would be of any use to them in efficiently allocating resources.

I conclude with Mises's own words (which are difficult to explain away without invoking some problematic hermeneutical principle[6]): "It was a serious mistake to believe that the state of equilibrium could be computed, by means of mathematical operations, on the basis of the knowledge of conditions in a nonequilibrium state. It was no less erroneous to believe that such knowledge of the conditions under a hypothetical state of equilibrium could be of any use for acting man in his search for the best possible solution of the problems with which he is faced in his daily choices and activities" (Mises 1966, pp. 714–15).

[5]It should be emphasized that Mises did recognize a separate and "practical" knowledge problem confronting socialism. But he hastened to make it clear that it was not this problem that rendered a socialist economy a logical impossibility. Thus Mises (1966, p. 715) concluded his chapter in *Human Action* on the "The Impossibility of Economic Calculation under Socialism" with the following sentence: "There is therefore no need to stress the point that the fabulous number of equations which one would have to solve each day anew for a practical utilization of the [mathematical] method would make the whole idea absurd *even if it really were a reasonable substitute for the market's economic calculation*" [my emphases]. Mises then refers the reader in a footnote to Hayek's knowledge-based critique of the mathematical solution in the volume on *Collectivist Economic Planning* (Hayek 1975, pp. 207–14).

[6]Yeager (pp. 100–5) devotes over one-third of the text of his article to supporting his interpretation of Mises's calculation argument with appeals to similar interpretations advanced by other notable Hayekians on the contemporary scene as well as to his own past intellectual experience in coming to terms with Mises's writings. But it is precisely this now conventional explication of Mises's calculation argument–which rapidly became entrenched among Hayekians after the work of Don Lavoie—that SRH take issue with, because they believe it represents a palpable conflation of Hayek's and Mises's thought. Thus, it is difficult to see what these appeals add to Yeager's case beyond an argument from authority. For a critique of the unwarranted "homogenization" of Mises and Hayek by some contemporary Austrian economists, see Salerno (1993).

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The Philosophy of Austrian Economics

The Philosophical Origins of Austrian Economics. **By David Gordon. Auburn, Alabama: Ludwig von Mises Institute, 1993.**

Barry Smith

This is a useful, clearly written study of the philosophical origins of Menger's theorizing in economics. As the author points out in his conclusion: philosophy has been an accompanying presence at every stage in the development of Austrian economics. Moreover, "Action, that leitmotif of praxeology, has in the Austrian tradition received a distinctly Aristotelian analysis. Austrian economics and a realistic philosophy seem made for each other."

Gordon packs considerable material into a short span, and inevitably some simplifications arise. Thus in defending a view according to which Austrian economics arose in reaction to the "Hegelianism" of the German Historical School, he ignores the differences which existed between the views of Knies, Roscher, Schmoller and other members of the German school, as he ignores also recent scholarship which points to hitherto unnoticed similarities between the work of some of these thinkers and that of Menger.

Underlying Gordon's treatment of nineteenth-century philosophical thinking in the German-speaking world is the idea of a division into two camps. On the one hand (and here I, too, am guilty of some simplification in expounding Gordon's views) is the camp of German philosophy, which Gordon sees as being Hegelian, anti-science, and organicist. On the other hand is the Austrian camp, which he sees as Aristotelian, pro-science, and individualist in its methodology. The members of the Historical School are placed in the former camp and

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are described as having embraced a Hegelian position inimical to the development of economic science. Menger, in contrast, falls squarely in the latter camp, and is presented as having shown the way towards a genuinely scientific theory of the "principles" of economics, a theory capable of being applied at all times and to all cultures.

The simplification involved in this two-camp hypothesis can be seen already in the fact that Brentano, normally and correctly regarded as the Austrian philosopher (and as the philosophical representative of Austrian Aristotelianism) *par excellence*, was in fact born in Germany, and his Aristotelianism was decisively influenced by the thinking of the German metaphysician F. A. Trendelenburg. What is more, Hegel himself was seen by his contemporaries as having been responsible precisely for a *revival* of Aristotelianism, and Aristotelian elements are quite clearly present in the thinking of those whom he influenced (not least, as Meikle and others have shown, in that of Marx).

Interestingly, the two schools of Brentanian philosophy and of Mengerian economics were in a number of ways intertwined—to the extent that the Brentano school was dubbed the "second" Austrian school of value by analogy with the "first" school of Menger. It is difficult to establish the degree to which Brentano influenced Menger (the history of philosophy is, as Gordon himself points out, not an apodictic science), and in my own writings on this matter I have preferred to leave this question open. Gordon writes (p. 27) that Brentano revived the study of Aristotle in Austria; this, too, is a simplification: a certain institutionalized Aristotelianism had survived in Austria (a Catholic country), as it had not survived in those Protestant parts of the German-speaking world influenced by Kant and by the Kantian criticism of all "metaphysics." Both Menger and Brentano were able to flourish in Austria in part because of this Aristotelian background, but all of this makes still more urgent the question as to the precise difference between the "Aristotelianism" of Hegel, Marx, the German Historical economists, and the "Aristotelianism of the Austrians.

Both groups embraced a suspicion of mathematics. And both groups embraced a form of essentialism: they saw the world as being structured by "essences" or "natures" and they awarded a central role to the necessary laws governing these. (The propositions expressing universal connections amongst essences are called by Menger "exact laws." It is such laws which constitute a scientific theory in the strict sense, as Menger sees it. The general laws of essence of which such a theory would consist are moreover subject to no exceptions. In this respect they are comparable to the laws of geometry or mechanics,

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and contrasted with mere statements of fact and with inductive hypotheses.)

Both groups held that we can know *what the world is like* in virtue of its conformity to laws, so that the laws are in some sense intelligible, a matter of what is accessible to reason. And both held further that general essences do not exist in isolation from what is individual. Thus they each embraced a variety of immanent realism: they were interested in essences and laws as these are manifested in *this* world, and not in any separate realm of incorporeal Ideal Forms of the sort which would absorb the attentions of philosophers of a Platonistic bent.

Both groups would thus stand opposed to the positivism which has been dominant in philosophical circles for the bulk of the present century and serves as the unquestioned background of almost all contemporary theorizing among scientists themselves. For positivists the world consists of elements that are associated together in accidental and unintelligible ways; all intelligible structures and all necessities are the result of thought-constructions introduced by man, and the necessities involved can accordingly be exposed without remainder as matters of logic and definition. The positivist sees only one sort of structure *in re*, the structure of accidental association. The two groups of Aristotelians, in contrast, see also non-trivial yet intelligible and law-governed worldly structures, of a sort that one can understand. Hence where the positivist sees only one sort of change—accidental change (for example of the sort which occurs when a horse is run over by a truck)—the Aristotelian sees in addition intelligible or law-governed change, as, for example, when a foal grows up into a horse (or when a state-managed currency begins to lose its value in relation to other goods). The presence of intelligible change implies, moreover, that there is no "problem of induction" for either group of Aristotelians. When we understand a phenomenon as the instance of a given species, then this understanding relates also to the characteristic patterns of growth and evolution of the phenomenon in the future and to its characteristic modes of interaction with other phenomena.

In what respects, then, do the German and Austrian Aristotelians differ? First, we mention one minor point (which plays too central a role in Gordon's exposition): the two groups differ in their respective estimations of the role and potentialities of scientific theory, and offer different accounts of the relations between history and philosophy, and also between both of these and "exact" and empirical science. Yet these differences are a matter of emphasis only. Thus Marx himself embraces the assumption that science is able to penetrate through

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the ideological obfuscations by which the commonsenical mind (as he conceives things) is of necessity affected. Other German philosophers saw philosophy itself as a science, indeed as a rigorous science in something like the Mengerian sense.

The first major difference between the two groups concerns the account they give of the degree to which the laws of a science such as economics are *strictly universal*. For Menger and Brentano (as for Aristotle before them) strict universality is the necessary presupposition of any scientific theory in the genuine science. Such universality is however denied by Marx, for whom laws are in every case specific to *a given social organism*.[1]

The second such difference concerns the issue of methodological *individualism*—a feature which is of course characteristic of Menger and his school. Note, however, that Menger was opposed not only to the holism or collectivism of the sort that was propounded by (among others) Marx, but also, at the opposite extreme, to atomistic doctrines of social organization. For methodological individualism deals with individuals not as isolated, independent atoms, but as nodes in different sorts of complex cross-leaved relational systems. Society and its institutions (including the market) are not merely additive structures; they share some of the qualities of organisms. The behavior of such structures is, for the methodological individualist, to be understood in the last analysis entirely in terms of complex systems of desires, reasons, and motivations on the parts of individuals; but the institutional structures themselves are for all that real, and the desires, reasons, and motivations—and thus also the actions—of the constituent members of such structures exist and have the texture and content that they have only in virtue of the existence of the given institutional surroundings. We may recall, in this connection, Aristotle's view of the city-state as an organic entity: these and other organicist elements in Aristotle's thinking were, I want to suggest, taken over by Menger, too, though mediated through the latter's theory of the essential laws governing the world of economic and other social phenomena. Economics is methodologically individualist when its laws are seen as being made true in their entirety by patterns of mental acts and actions of individual subjects, but economic phenomena are then grasped by the theorist precisely as the results or outcomes of *combinations and interactions* of the thoughts and actions of individuals.

[1]Cf. S. Meikle (1985), p. 6, n. 4.

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The third major difference turns on the fact that, from the perspective of Menger, the theory of value is to be built up exclusively on "subjective" foundations, which is to say exclusively on the basis of the corresponding mental acts and states of human subjects. Thus value for Menger—in stark contrast to Marx—is to be accounted for exclusively in terms of the satisfaction of human needs and wants. Economic value, in particular, is seen as being derivative of the valuing acts of ultimate consumers, and Menger's thinking might most adequately be encapsulated as the attempt to defend the possibility of an economics which would be at one and the same time both theoretical (dealing in universal principles) and subjectivist in the given sense. Among the different representatives of the philosophical school of value theory in Austria (Brentano, Meinong, Ehrenfels, etc.) subjectivism as here defined takes different forms.[2] All of them share with Menger however the view that value exists only in the nexus of human valuing acts.

Finally, the two groups differ in relation to the question of the existence of (graspable) laws of historical development. Where Marx, in true Aristotelian spirit, sought to establish the "laws of the phenomena," he awarded principal importance to the task of establishing *laws of development*, which is to say, laws governing the transition from one "form" or "stage" of society to another. He *treats the social movement as a process of natural history governed by laws*,[3] and he sees the social theorist as having the capacity to grasp such laws and therefore also in principle to sanction large-scale interferences in the social organism which is the state. Marx himself thereby saw social science as issuing in highly macroscopic laws, for example to the effect that history must pass through certain well-defined "stages." The Aristotelianism of the Austrians is in this respect more modest: it sees the exact method as being restricted to essences and to simple and rationally intelligible essential connections only, in ways which set severe limits on the capacity of theoretical social science to make predictions. It is in this connection that the methodological individualism of the Austrians has been criticized by Marxists as a form of atomism, though such criticisms assume too readily that methodological individualism trades in mere "sums."

What, now, of the German historical economists? As already noted, Aristotelian doctrines played a role also in German economic

[2]See, on this, the papers collected in Grassl and Smith, eds. (1986).

[3]Passage cited by Marx himself in the "Afterword" to the second German edition of volume 1 of *Capital* and adopted as a motto to Meikle 1985.

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science, not least as a result of the influence of Hegel. Thus for example, Roscher, as Streissler has shown, developed a subjective theory of value along lines very similar to those later taken up by Menger. Such subjectivism was accepted also by Knies. Moreover, Knies and Schmoller agreed with the Austrians in denying the existence of laws of historical development. In all of these respects, therefore, the gulf between Menger and the German historicists is much less than has normally been suggested. The German historicists are still crucially distinguished from the Austrians, however, in remaining wedded to an inductivistic methodology, regarding history as providing a basis of fact from out of which mere empirical generalizations could be extracted. (Schmoller, especially, attacked the idea of universal laws or principles of economics.) For an Aristotelian such as Menger, in contrast, sheer enumerative induction can never yield that sort of knowledge of exact law which constitutes a scientific theory. For this, reason and insight are indispensable to the science of economics as the Austrian conceives it; and (as Mises has stressed) a knowledge of the science of human action is in fact an indispensable presupposition of that sort of fact-gathering which is the task of the historian.

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Second Thoughts On *The Philosophical Origins of Austrian Economics.*

David Gordon

Professor Barry Smith's characteristically erudite remarks about my pamphlet provide me with a welcome opportunity to offer some additions and corrections. I have no major disagreement with Smith's comments, but he has at one place ascribed to me a much more ambitious thesis than I intended.

He thinks I wish to divide "nineteenth-century philosophical thinking in the German-speaking world" (p. 125)[1] into two camps: German, which I see as "Hegelian, anti-science, and organicist" and Austrian, which in contrast is "Aristotelian, pro-science and individualist" (p. 125–26). Against this view, Smith maintains that Hegel, Marx, and the German Historical School display marked affinities with the Austrians: both groups, in particular, count as Aristotelian.

I meant to advance a much more limited conjecture than this: Hegel's stress upon organic unity may have influenced the aversion toward a universal science of economics found among Schmoller, Sombart and other members of the German Historical School. I also had a little to say about Hegel's politics, but I did not intend a full characterization of Hegel's philosophy, much less nineteenth-century German and Austrian philosophy as a whole.

Smith's emphasis on the Aristotelian elements in Hegel seems to me entirely well taken and supported by longstanding scholarly opinion. As an example, one outstanding British authority on Hegel, G. R. G. Mure, in his *Introduction to Hegel* (Clarendon Press: Oxford, 1940) devotes his first few chapters entirely to Aristotle before so much as mentioning Hegel. But I venture to suggest that

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[1]All references to *The Philosophical Origins of Austrian Economics* (Auburn, Ala.: Ludwig von Mises Institute, 1993) and to Barry Smith's review, which appears in this volume, are by page number in parenthesis in the text.

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the similarities between Aristotle and Hegel leave my suggestion untouched. For Hegel, "the Truth is the Whole" in a way that inhibits the elaboration of separate sciences. Like Aristotle, Hegel favored teleological explanation; but if, as Hegel thought, everything is organically related to everything else, how can one develop a distinct discipline of economics with universal laws?

Or so at least it seemed to me in 1988, when I gave the lecture on which the pamphlet is based. I did not then know that an important study had challenged the view of Hegel's doctrine of internal relations which I presented. R. P. Horstmann, in *Ontologie und Relationen* (Koenigstein: Atheneum, 1984) argues strongly that Hegel did not support a doctrine of internal relations in the style of the British Idealists. Further, Robert B. Pippin, in *Hegel's Idealism* (Cambridge: Cambridge University Press, 1989), sees Hegel as a "conceptual holist" rather than the advocate of a metaphysical thesis.

But it is exactly here that Hegel's philosophy poses a problem for a science of economics. If one believes that our categories generate contradictions that can only be resolved by resort to a "higher" standpoint, and that this overcoming or "sublation" is continually repeated, will it not be difficult to construct independent scientific disciplines? Even, then, if my statements about internal relation in Hegel need to be changed, my suggestion is still in the running.

To turn to a few details, Smith with complete justice notes that my picture of the German Historical School ignores the views of the earlier Historical School (his term, "simplifications" is much too kind). My remarks on the group should be taken as limited to the later Historical School, as I note at page 43 of the pamphlet. When I gave the lecture, I did not know the material on the earlier group to which Smith refers.

Smith notes that Brentano was "decisively influenced by the thinking of the German metaphysician, F. A. Trendelenburg" (p. 126). Certainly, this makes it difficult to assert a complete polarity between German and Austrian philosophy; but, once more, this is not my thesis. I do not think that Trendelenburg's influence can be used to show a similarity between Hegel and Brentano, since Tredelenburg, far from being a Hegelian, sharply criticized Hegel's *Logic*. But Smith does not use Trendelenburg for this purpose.

I think it doubtful that the "presence of intelligible change implies . . . that there is no problem of induction for either group of Aristotelians" (p. 127). It is of course right that if one grasps a law-governed change, one is not restricted to induction by simple enumeration. But does this solve the problem of induction? Does it logically

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follow from the existence of an intelligible change at a particular time that the law will continue to hold in the future? Or are these doubts merely an undue Humean skepticism? (I am not sure whether Smith intends only to give the view of the Aristolelians or also to endorse it.)

Smith's review has a fundamental failing I have so far ignored: he is entirely too easy on me. Before I turn from Smith to my own corrections, however, may I say that I hope the rumor is true that Smith has forthcoming a book on the philosophy of the Austrian School. He is one of the world's foremost authorities on nineteenth and twentieth century Austrian philosophy.

And now for my "second thoughts." At page 7, it would be better to say that Sombart knew Mises rather than that the two economists were friends.[2] At pages 10–11 I describe the doctrine of internal relations in a grossly mistaken way. A supporter of internal relations thinks that any property of an entity is essential to it. But it does not follow from this that any change in a property will affect every other *property* of an entity. Someone might hold that internal relations connect only properties and substances, not properties by themselves. (A more exigent version of the doctrine *would* hold that every property is internally related to every other property of the substance it modifies. A still more demanding version would hold every property is internally related to every other property of *any* substance). And the first sentence on p. 10 should read: "the person who has met the President is an *essentially* different person from the one who has not."

At p. 27, when I claim that for Aristotle "[e]mpirical science exists as a placeholder for true science, which must work through deduction," this wrongly suggests that a deductive science for Aristotle is non-empirical. "Empirical" must be understood in the sense of "mere empirical hypotheses" of the preceding paragraph. For Aristotle, the evident principles of a deductive science come from observation of the world.

Much more serious is the confused discussion of self-evident axioms on pp. 27–28. The regress argument of the *Nicomachean Ethics* is used to establish the existence of a highest end. I should have explicitly stated that the regress argument that I discuss is a generalization of the argument of the *Ethics*, not given there in the form in which I present it. An objection to my discussion which I overlooked is this: I claim that a science can have several basic axioms: justification need not proceed from a *single* self-evident

[3]I am grateful to Ralph Raico for this point.

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axiom. But if there are several axioms, can't they be combined into a single axiom through conjunction? I ought to have specified that the argument is restricted to axioms that are not logical parts of other axioms. Further, it is not clear that the discussion is needed: has anyone claimed that a science is derived from a single axiom? Perhaps Mises hints at it; but even he allows subsidiary postulates.[3]

The discussion of the verification principle at p. 36 is seriously mistaken, and I am greatly indebted to Matthew Hoffman for pointing this out to me. First, I ought to have made clearer that I make two assumptions *not* part of the verification principle, on which my argument depends: if a statement is verifiable, its negation is verifiable; and any logical consequence of a verifiable proposition is verifiable. The argument then proceeds as follows: "From p, we derive (p or q). But suppose that p is false—then we have:

$$\begin{array}{l} p \text{ or } q \\ \underline{\text{not-}p} \\ \therefore q \end{array}$$

By hypothesis, p is verifiable; then (p or q) and (not-p) are verifiable, by our assumptions. Then q is verifiable, since it is a logical consequence of verifiable propositions." This should be substituted for the erroneous argument at p. 36.

[3]I am grateful to Murray Rothbard for this objection.

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